Ontario
Energy
Board

Ontario

IN THE MATTER OF A REFERENCE
FROM THE MINISTER OF ENERGY
RESPECTING

ONTARIO HYDRO'S
PROPOSED ELECTRICITY RATES
FOR 1993

H.R. 21

REPORT OF THE BOARD

August 25, 1992

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Commission
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August 25, 1992

The Honourable Brian A. Charlton
Acting Minister of Energy
12th Floor
56 Wellesley Street West
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Dear Minister:

Re: Ontario Hydro H.R. 21 Report

In accordance with your letter of reference dated April 1, 1992, the Ontario Energy Board conducted a public hearing to investigate, examine and report on the proposal of Ontario Hydro, dated April 1, 1992, to change its bulk power rates effective January 1, 1993.

The Report of the Board is hereby respectfully submitted.

ONTARIO ENERGY BOARD

Orville J. Cook

Orville J. Cook
Vice Chair and Presiding Member

C.W.W. Darling

C. William W. Darling
Member

Richard R. Perdue
Member

Ed J Robertson

Edward J. Robertson
Member

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PREFACE

The Reference and the Hearing

In a letter to the Minister of Energy ("the Minister") dated April 1, 1992, the Chair of Ontario Hydro indicated that the Corporation proposed to increase its bulk or wholesale power rates by an average of 8.6 percent effective January 1, 1993.

The Minister, in accordance with the provisions of Section 37 of the Ontario Energy Board Act ("the Act"), by letter dated April 1, 1992 ("the Reference") referred the proposed rate increase to the Ontario Energy Board ("the Board" or "the OEB") for review in a public hearing.

In the Reference the Minister set out the following criteria and factors for the guidance of the Board:

> The Board shall examine and report on the manner in which Ontario Hydro has determined its revenue requirement and the extent to which Ontario Hydro has kept its proposed revenue requirement for 1993 as low as feasible.
>
> In making its recommendations, the Board will have due regard for the maintenance of Ontario Hydro's financial soundness, its ability to attract capital at favourable rates, the reliability and quality of its services to its customers and the impact on electricity customers of the proposed changes.
>
> Ontario Hydro's system expansion plans do not require review at the rate hearing except for their influence on 1993 rates. Ontario Hydro's Demand/Supply Plan, and associated issues are currently being reviewed by the Environmental Assessment Board.
>
> Program activities planned for 1993 in the areas of energy management and non-utility generation that will impact 1993 rates should be reviewed at this rate hearing. However, policies and long term targets for energy management and non-utility generation are currently being

> reviewed in the context of the Demand/Supply Plan, and hence do not require review at this hearing.
>
> As part of the Board's review of Hydro's costs, I would like the Board panel to review the level of compensation for senior executives at Ontario Hydro, that is those at the Vice-President level and above including the Chair/Chief Executive Officer and President. I would expect that as part of this review the Board would compare Ontario Hydro executive compensation levels with those of other public utilities, both government and investor-owned, in Ontario, Canada and the rest of North America. I would also expect that Hydro's executive compensation would be compared to private sector compensation for executives with the equivalent level of responsibility.

The Minister added the following points:

> In conducting its review, I would expect the Board to recognize the confidentiality and commercially sensitive nature of matters that are the subject of negotiation or in litigation before the courts.
>
> I would appreciate it if the Board structured its recommendations so that Ontario Hydro may act directly on the revenue requirement, and the resulting rates, in accordance with its responsibilities under the Power Corporation Act and so that I may consider separately such other recommendations as the Board may make.
>
> I look forward to receiving the Board's report as early as possible, but not later than August 31, 1992.

The Board assigned the Reference Board File No. H.R. 21 and issued several Notices and Procedural Orders to inform interested parties and the public about the hearing, how to intervene and how to apply for intervenor funding under the provisions of the Intervenor Funding Project Act, 1988.

On April 27, 1992 the Board reviewed the specific issues for H.R. 21 and on that day also dealt with a number of other procedural matters related to interrogatories and scheduling. The issues list was finalized by the Board on April 28, 1992.

Twenty parties responded to the Board's Notices by requesting intervenor status and of these, seven requested advance intervenor funding to support their interventions. An intervenor funding hearing was held on April 29 and 30, 1992 with a supplemental funding hearing taking place on May 21, 1992. The Funding Decisions were issued on May 8 and May 21, 1992 respectively. Advance funding was provided for all seven applicants. Of the 20 intervenors, twelve participated actively at the hearing. Board Staff also took an active role in this proceeding.

Approximately 45 letters of concern were filed with the Board and became part of the record in this year's hearing. Although there were numerous concerns expressed in the correspondence, the principal concern was the ongoing and high increases in Hydro's rates given the current hard economic times.

The hearing of evidence on 1993 rates commenced on June 1, 1992 and was completed on June 26, 1992 after 20 sitting days. Argument was received by July 16, 1992.

A verbatim transcript of the proceedings, together with an official copy of all exhibits, is retained in the Board's files and is available to the public for inspection.

The Board has carefully evaluated all the evidence, submissions and representations but has only summarized in this Report the evidence and positions of the parties to the extent necessary to explain specific and significant issues. Executive Summaries of the arguments presented by the parties are included in Appendix B of this Report.

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Mayor
Town of Caledon

L. WADE

L. Wade
Concerned Citizen

1. OVERVIEW OF 1993 RATE PROPOSAL AND SUMMARY OF BOARD RECOMMENDATIONS

1.1 INTRODUCTION

1.1.1 In its April 1, 1992 letter to the Minister and in its original filing with the Board, Hydro proposed to increase electricity rates in 1993 to both municipal utilities and direct customers by 9.1 percent. The proposed rate increases affect 311 municipal electric utilities in the province, which distribute electricity to their residential, commercial and industrial customers, and 107 large industrial customers served directly by Hydro.

1.1.2 The specific impact on individual municipalities and direct customers would vary depending on consumption patterns, supply conditions, and rate classifications. Hydro's proposal would add about $6 to the monthly bill of the average Ontario municipal householder.

1.1.3 The proposed increases to the municipal and direct customers, combined with a proposed 6.6 percent rate increase to rural customers, results in an overall average rate increase of 8.6 percent.

1.1.4 Based on Hydro's original filing, the new rates will recover operating costs as well as net income of $318 million which is $254 million lower than the Statutory Debt Retirement ("SDR") appropriation level and thus would require a withdrawal from the Reserve for Stabilization of Rates and

Contingencies ("RSRC" or "the reserve"). Based on the June 30, 1992 final update, net income is forecast to be $269 million and withdrawal from the reserve would be $303 million. Hydro calculated that a rate increase of about 13.5 percent would be required for target net income to satisfy the SDR. Hydro's 8.6 percent rate increase proposal reflects its attempts to balance financial considerations and rate smoothing.

1.1.5 Table 1-1 shows the components of the revenue requirement for 1993, compared with actual results for 1991 and projected results for 1992. The original forecast revenue requirement for 1993 was $9,017 million, $796 million greater than expected primary revenues for 1992 when 1992 rates were set. Based on the updated financial forecast, the revenue requirement for 1993 represents an increase of $960 million over the updated projection for 1992. The evidence revealed that about 10 percent of the increase in the revenue requirement would be met through higher primary sales, leaving the remaining 90 percent to be recovered through the proposed rate increases.

1.1.6 The primary factors contributing to the 1993 rate increase are shown in Table 1-2. The most important factor by far is Darlington coming into or returning to service in 1993, and other nuclear costs.

1.1.7 Some of the key results and planning assumptions underlying the 1993 rate increase proposal are summarized in Table 1-3. Based on the updated forecast, primary sales are expected to increase by about 3.2 percent to 143.5 Twh. Hydro's rate proposal anticipates an inflation rate for Ontario of 3.1 percent, while the economy is expected to achieve a durable and significant recovery from the recession. Hydro expects a gradual rise in interest rates, starting in mid 1992, to accompany the recovery.

1.1.8 Hydro's forecast debt ratio for 1993 of 0.84 is expected to be virtually unchanged from earlier years while its interest coverage ratio of 1.07 is lower than the 1.11 ratio projected for 1992 and is virtually unchanged from the level achieved in 1991. The anticipated borrowing level for 1993 of $4.3 billion is slightly lower than the level projected for 1992.

TABLE 1-1: REVENUE REQUIREMENT
($ MILLIONS)

		Original Filing		Final Update	
Component	**Actual 1991**	**1992**	**1993**	**1992**	**1993**
Operation, Maintenance and Administration	2,037	2,136	2,319	2,106	2,305
Fuel and Fuel-Related	1,273	1,422	1,233	1,385	1,185
Provincial Government Levies	252	271	290	270	288
Depreciation	1,136	1,192	1,538	1,192	1,521
Interest and Foreign Exchange	2,241	2,635	3,439	2,663	3,488
Total Operating Costs	6,939	7,656	8,818	7,616	8,787
Net Income	204	522	318	407	269
Secondary Revenues	(62)	(70)	(119)	(46)	(120)
Revenue Requirement*	**7,081**	**8,107**	**9,017**	**7,976**	**8,936**

* Revenues for primary power and energy for 1991 and 1992.

Sources: Main Submission - Table 1-1
Exhibit 1.1.4 - Final Update

1.2 RATE INCREASE RECOMMENDED BY THE BOARD

1.2.1 After reviewing the evidence and arguments submitted in these proceedings, the Board has found Hydro's revenue requirement for the 1993 rate year to be $8,842 million which is $94 million lower than Hydro's updated estimate of $8,936 million. The Board has also found that the revenue from primary sales will be $35 million lower than Hydro's forecast. Consequently, the Board recommends that the overall average rate increase for 1993 be set at 7.9 percent.

TABLE 1-2: FACTORS CONTRIBUTING TO THE 1993 RATE INCREASE

Factors	**Original Filing %**
Factors Contributing to Increase:	
Darlington In-Service and Other Nuclear Costs	6.7
Rehabilitation and Improvement of Reliability of Existing Facilities	1.7
Other Facilities Placed In-Service	1.2
Non-Utility Generation	0.8
Demand Management:	
Load Restriction	0.5
Costs	0.1
Higher Primary Sales	(1.1)
Other	(1.3)
Total Rate Increase	**8.6**

Source: Main Submission - Table 1-2

1.2.2 Table 9-4 and 9-5 in Chapter 9 summarize the results of the Board's recommendations relating to the 1993 revenue requirement and the recommended 1993 rate increase.

TABLE 1-3: KEY RESULTS AND PLANNING ASSUMPTIONS

Particulars	Actual 1991	Original Filing		Final Update	
		1992	1993	1992	1993
Average Rate Increase (%)	8.6	11.8	8.6	11.8	8.6
Consumer Price Index (Ontario - % change)	5.0	3.5	3.8	2.3	3.1
Primary Sales (Twh)	137.0	141.3	144.7	139.1	143.5
Financial Indicators:					
Debt ratio	0.838	0.838	0.838	0.839	0.840
Interest Coverage Ratios:					
Level	1.06	1.14	1.08	1.11	1.07
Quality	0.62	0.68	0.87	0.69	0.88
Cash Flow Coverage	1.03	1.15	1.42	1.12	1.39
Statutory Debt Retirement ($ Millions)	416	472	572	472	572
Financing ($ Billions)					
Capital Program Costs	3.9	4.6	3.6	4.3	3.5
Borrowing	6.5	4.8	4.3	4.6	4.3
Net Borrowing	2.8	2.6	1.3	2.4	1.2
Current Operations ($ Millions)					
Costs	6,939	7,656	8,818	7,616	8,787
Net Income	204	522	318	407	269
Secondary Revenue	(62)	(70)	(119)	(46)	(120)
Revenue Requirement* ($ Millions)	7,081	8,107	9,017	7,976	8,936

* Revenues for primary power and energy for 1991 and 1992.

Source: Exhibit 1.1.4 - Final Update

1.3 RECOMMENDATIONS OF THE BOARD

1.3.1 Recommendations Relating to the Proposed Revenue Requirement

Recommendation 2.1:

The Board recommends that Hydro reduce its forecast of long-term interest rates by a full percentage point to 8.5 percent. The impact of this recommendation is to reduce the 1993 revenue requirement by $36 million.

Recommendation 2.2:

The Board recommends that Hydro's 1993 primary sales forecast be reduced by 0.56 percent. This will reduce Hydro's 1993 revenue by $35 million.

Recommendation 5.1:

The Board recommends that 1993 rates be set on the basis that all units at Darlington will not be brought into service until three months later than Hydro's current forecast. This reduces the 1993 revenue requirement by $108 million.

Recommendation 6.4:

The Board recommends that Hydro reduce its OM&A expense budget for 1993 by 5 percent. The effect of this recommendation is to reduce the 1993 revenue requirement by $115 million.

Recommendation 7.1:

The Board recommends that Hydro include a $14 million provision for low and intermediate level radioactive waste disposal in depreciation expense for 1993. The impact of this recommendation is to increase the revenue requirement by $14 million for the 1993 rate year.

Recommendation 9.1:

The Board recommends that Hydro set the 1993 level of net income at $420 million in order to meet the Board's adjusted SDR of $560 million in combination with a withdrawal of $140 million from its RSRC. Given the Board's expectation that the Corporation will fully implement the other recommendations in this Report relative to the 1993 revenue requirement, the impact of this recommendation is an increase in the requirement of $151 million.

Recommendation 9.2:

The Board recommends that Hydro increase its electricity rates by an average of 7.9 percent effective January 1, 1993.

1.3.2 Recommendations to the Minister

Recommendation 3.2:

The Board recommends that the Minister include in the reference for H.R. 22 a direction for the Board to specifically investigate and examine the cost effectiveness of the programs in Hydro's overall energy management plan.

Recommendation 6.3:

The Board recommends that the Minister introduce changes to Section 24 of the Power Corporation Act to ensure its consistency with the Pension Benefits Act, in particular with regard to the constraints on Hydro's use of any surplus in its pension fund.

1.3.3 Other Recommendations

Recommendation 3.1:

The Board recommends that Hydro should immediately arrange a series of workshops with stakeholders to further review and develop its energy management programs in time to file a report in H.R. 22.

Recommendation 3.3:

In view of the importance of the monitoring and evaluation process and the evidence which indicates that Hydro has certain measurement problems in this area, the Board recommends that Hydro, while not increasing its energy management budget as a whole, should make further resources available to the monitoring and evaluation functions.

Recommendation 3.4:

The Board recommends that Hydro increase its consultation, planning and program design efforts to the maximum extent possible on the matter of fuel substitution. It should report on its progress in this regard in H.R. 22.

Recommendation 4.1:

The Board recommends that Hydro should prepare and publicize a distinct set of goals designed to encourage small environmentally and socially preferred non-utility generation.

Recommendation 4.2:

The Board recommends that no further financial assistance be given for the development of any new non-utility generation project during this period of over-supply, except when required for small environmentally and socially preferred projects.

Recommendation 6.1:

The Board recommends that Hydro strive to achieve real reductions in OM&A program costs which result, not only from temporary deferrals, but rather from cuts that will endure regardless of the prevailing economic conditions.

Recommendation 6.2:

The Board recommends that Hydro make the reduction of the total compensation differentials with external reference communities a top priority.

Recommendation 7.2:

The Board recommends that Hydro's Executive and Audit Committee make a decision following the Depreciation Review Committee's 1993 recommendations relating to heavy water and the DSP update rather than deferring such decisions pending receipt of the EAB Report.

Recommendation 7.3:

The Board recommends that, effective January 1, 1993, Hydro amortize the costs accumulated in the heavy water future-use pool using the straight line rather than the sinking fund method.

2. ECONOMIC AND LOAD FORECAST

Hydro forecast a continuation of moderate growth in the rate year for Ontario's GDP. It pointed to increasing evidence of a more durable and broadly based recovery from the recession. The Corporation forecast its primary electrical load for 1993 to be 143.5 Twh, 2.6 percent higher than the 1992 level. It forecast the 1993 December peak to be 23 952 MW, an increase of 2.7 percent over the 1992 forecast peak.

2.1 INTRODUCTION

2.1.1 The foundation of any electrical utility's rate making is the forecast of its primary load or the total amount of electricity that the utility considers it must produce to meet its rate year requirements. This load forecast is essentially driven by the utility's view of the health of the economy and therefore a change in the Gross Domestic Product ("GDP") in Ontario is the key determinant in Hydro's 1993 economic forecast.

2.1.2 Although Hydro's economic outlook for the rate year is predominantly used for forecasting its electrical load, it is also used as a planning tool to forecast the Corporation's interest expense as well as OM&A and capital costs. The first part of this chapter therefore deals with the Board's comments on Hydro's economic outlook and the second part deals with the load forecast itself.

2.2 ECONOMIC INDICATORS

2.2.1 As in past years, both Hydro and Board Staff presented direct evidence on the question of the economic climate for the rate year. For ease of presentation, a summary of this evidence is presented in Table 2-1.

2.2.2 As can be seen from the information, Hydro, as well as Board Staff's consultant, Wharton Economic Forecasting Associates ("WEFA"), updated their forecasts for both 1992 and 1993. As well, the forecast from the Government's 1992 provincial budget is also shown as it too was part of the evidence.

2.2.3 Hydro testified that as 1992 progressed it lowered its 1993 forecast largely because the recovery from the recession was anticipated to be delayed from the first to the second half of 1992. However, it testified that the underlying factors which were expected to produce the recovery are still present: low interest and inflation rates and Canadian dollar; improving Canadian consumer and business confidence and recovery of the U.S. economy. Hydro testified that major improvements in Canadian competitiveness have been taking place recently as a result of the Free Trade Agreement and are expected to continue in 1993 which will have the effect of maintaining the value of the Canadian dollar.

2.2.4 Hydro's view of the recovery is that it will be slow but, since it is driven by an increase in the manufacturing sector, it will be greater in Ontario than the rest of Canada. The utility's witnesses testified that recovery in the manufacturing sector will be sustained by increased consumer demand, low inventory levels and increased capital spending. Hydro's witnesses also testified that the increase in economic activity in 1993 will result in increased inflation, and combined with increased demands for capital, it would exert some upward pressure on interest rates in 1993.

TABLE 2-1: COMPARISON OF ECONOMIC FORECASTS

		Hydro Nov 91	Hydro Apr 92	Hydro May 92	Ontario Budget*	WEFA May 92	WEFA June 92
ONTARIO							
GDP (%)	'92	3.9	3.0	2.5	1.4	1.9	1.6
	'93	4.0	4.6	4.6	3.9	4.2	3.5
CPI (%)	'92	3.5	2.3	NA	2.0	1.8	1.7
	'93	3.8	3.1	NA	2.6	2.6	2.6
Unemp. (%)	'92	8.5	9.3	NA	9.5	10.2	10.2
	'93	7.3	8.8	NA	8.8	10.0	10.5
Housing Starts (000's)	'92	63.3	65.3	NA	69.0	61.1	63.1
	'93	75.2	75.2	NA	83.0	64.6	66.1
CANADA							
GDP (%)	'92	3.5	2.7	NA	1.6	1.5	NA
	'93	3.5	4.0	NA	3.6	3.1	NA
CPI (%)	'92	5.8	2.3	NA	2.2	2.0	NA
	'93	3.4	2.9	NA	2.6	2.7	NA
Unemp. (%)	'92	10.7	10.6	NA	NA	10.8	NA
	'93	10.3	9.9	NA	NA	11.0	NA
90-Day T-Bills (%)	'92	7.9	7.1	6.5	NA	6.8	NA
	'93	8.5	7.6	7.6	NA	6.4	NA
Long Gov't Bonds (%)	'92	9.2	9.2	NA	NA	9.1	NA
	'93	9.5	9.5	NA	NA	8.7	NA
C$ in US$	'92	87.9	84.3	83.9	NA	83.6	NA
	'93	84.5	83.6	83.1	NA	81.2	NA
US GDP (%)	'92	2.7	1.6	NA	NA	1.5	NA
	'93	3.0	3.4	NA	NA	3.0	NA

* Ontario Budget released April 30, 1992

Sources: Exhibits 2.1.3, 2.1.3 Update, 2.6.1, 2.2.1, 2.3.11, 1992 Provincial Budget

2.2.5 In making these forecasts Hydro gathered much of its information from external economic consultants and followed the consensus view of economic trends.

2.2.6 To test its forecasting accuracy, Hydro conducted a study which concluded that its forecast error over the three years ending in 1991 for four important variables was lower, albeit by a small margin, than any of the results of the 12 forecasts it examined.

Positions of the Parties

2.2.7 Board Staff argued that Hydro should use the consensus forecast only as a check on its own forecast or alternatively it should seek a means to remove the effects of the different assumptions underlying those forecasts. Board Staff submitted that the Board should accept more cautious expectations for recovery during 1992 than Hydro had forecast and that it should therefore adopt the GDP growth rates for 1992 of 1.6 percent and 3.5 percent for 1993 presented by its witness. These changes were calculated in Hydro's reply argument to increase Hydro's 1993 revenue requirement by a total of $96 million.

2.2.8 The CEG pointed out that last year, the 1991 GDP forecast prepared by the Ontario Government proved to be more accurate than Hydro's and that this year, the Board should amend Hydro's forecast to conform to the Government's more pessimistic outlook for the remainder of 1992 by reducing the forecast growth rate to 1.4 percent. This, it argued, would suggest a lower 1993 GDP.

2.2.9 IPPSO argued that Hydro had consistently misjudged the depth of the current recession and that the Board should recommend that 1993 rates be set on the basis of a 2 percent GDP growth in 1992 and a 3 percent growth in 1993. It criticized Hydro for not including in its forecast the effects of two low probability but high impact events: the separation of

Quebec from the rest of Canada and the proposed North American Free Trade Agreement. The possibility of either of these occurring required that Hydro not treat 1993 as a normal year and, as well, the risk in 1993 is greater because the economy is struggling out of a recession.

2.2.10 In line with these concerns, IPPSO submitted that the Board should recommend to Hydro's Board of Directors that it require an analysis of the impacts of either of these events and that Hydro should reduce its projected revenue by a contingency amount to account for the uncertainties.

2.2.11 In regard to long-term interest rates, Board Staff criticized Hydro's forecast as being directionally inaccurate because it forecast an increase in both inflation and long-term interest rates to accompany increased growth and a greater demand for capital. It pointed out that the economy was still weak, unemployment was still high and inflation was expected to stay very low. It argued that the Board should apply a rate of 8.7 percent compared to the 9.5 percent proposed by Hydro, lowering borrowing costs by $29 million.

2.2.12 The MEA also argued that Hydro's forecast of long-term interest rates was too high and that the Board should find a rate which is the average of the two rates presented in evidence which would lower Hydro's proposed rate by 0.75 percent to 8.75 percent. The effect of this, the MEA argued, was to lower long-term borrowing costs by $27 million.

2.2.13 Board Staff also argued that Hydro's forecast of the Canadian dollar was too high and that it should be lowered to reflect Canada's poor cost competitiveness. It argued that the Canadian dollar should be at 81.2 cents U.S. rather than the 83.1 cents U.S. forecast by Hydro, increasing borrowing costs by $15 million.

Board Findings

2.2.14 Upon examining all the evidence in regard to Hydro's 1992 and 1993 forecasts, it appears to the Board that the major differences between the WEFA forecast and Hydro's were only two: the level of Ontario's GDP growth in both years and the expected 1993 Canadian long-term interest rates.

2.2.15 In regard to GDP growth rates, the parties' May forecasts differed in their 1992 figures by only 0.6 percent and narrowed to 0.4 percent on the 1993 forecasts. However, as a result of a June update filed by WEFA, the differences widened to 0.9 percent for 1992 and 1.1 percent for 1993. Hydro termed the May difference to be "noticeable but not major" but did not comment in a similar fashion in regard to the June figures.

2.2.16 The higher differences in the June figures were essentially caused by WEFA lowering its forecast for 1992 growth to 1.6 percent and 1993 to 3.5 percent while Hydro maintained its higher May figures. The WEFA witness said his forecast was now more in line with other forecasts notably the Conference Board of Canada and the Ontario Budget (which is the lowest of the three forecasts with 1992 forecast to grow only 1.4 percent).

2.2.17 During cross-examination and argument, the parties focused on the ability of the economy to experience large enough growth rates in the remaining quarters of this year to achieve Hydro's forecast of a 2.5 percent GDP growth for the entire year. The 1992 first quarter growth, published June 22, 1992, which is the most recent actual information available to the Board, showed a very poor rate of growth (0.1 percent). Witnesses testified and counsel argued about the growth rates experienced following the recession in 1981-2 and whether or not that recovery could be taken as a proxy for the recovery from this recession. Both sides unfortunately drew opposite conclusions.

2.2.18 However, it is clear that following the 1981-2 recession, the growth rates were quite phenomenal. In fact, in the last quarter of 1982, which followed five quarters of negative growth, the Ontario economy grew by 7.1 percent and hardly looked back until it began slowing for the approach of the recession from which we are currently recovering.

2.2.19 The Board accepts the view that the recovery in the early 1980s cannot be taken as a proxy for the 1990s recovery. The Board finds that the weight of evidence is for a slower recovery than Hydro has predicted.

2.2.20 The total effect of this is that in the Board's opinion the economy will not experience the type of recovery Hydro predicts in either 1992 or 1993. The Corporation's 1992 GDP growth estimate at 2.5 percent and its 1993 forecast of 4.6 percent are both considerably more optimistic than the growth rates predicted in the Ontario Budget or by WEFA.

2.2.21 However, the total amount of this excessive optimism in Hydro's forecasts can better be determined when the second quarter results are published August 31, the day this report is required to be submitted to the Minister. The Board expects that these results will not reflect the type of growth which Hydro has testified is necessary to achieve an overall growth of 2.5 percent in 1992. In making this decision, the Board has taken into account the already published poor first quarter results and the distinct lack of good news for either of North America's two major economies since then.

2.2.22 The effect of this is to stretch Hydro's view of the recovery from 1992 into 1993 and beyond with the overall result that Hydro's 1993 GDP growth rate will be reduced.

2.2.23 For these reasons the Board finds that Hydro's forecast of 4.6 percent GDP growth in 1993 is too optimistic and should be reduced by 1 percentage point to 3.6 percent.

2.2.24 Nevertheless, the Board also points out that it was impressed with the results of Hydro's Forecast Error Evaluation study which compared Hydro's consensus forecasting methodology with other forecasts. That study pointed out that all forecasters studied, including Hydro, misread the fluctuations in the Canadian dollar between 1986 and 1991 and that major uncertainty in regard to that forecast would continue for the next few years.

2.2.25 The Board, however, is persuaded that the Free Trade Agreement between Canada and the U.S. should assist in stabilizing the dollar as North American pricing of goods becomes more common and, as Hydro pointed out, Canada's competitiveness improves vis-à-vis the U.S. The Board will therefore not recommend a change in Hydro's Canadian dollar forecast as recommended by Board Staff.

2.2.26 In regard to Hydro's 9.5 percent forecast for 1993 long-term interest rates, the Board assumes that it will drop together with the anticipated 1993 GDP reduction outlined above. Hydro had testified that the difference between its forecast and the 8.5 - 8.7 percent recommended by Board Staff and the MEA was due to increasing inflation during the anticipated 1993 recovery. If the anticipated recovery is slower than Hydro expects the long-term interest rate forecast should drop accordingly.

Recommendation 2.1:

The Board recommends that Hydro reduce its forecast of long-term interest rates by a full percentage point to 8.5 percent. The impact of this recommendation is to reduce the 1993 revenue requirement by $36 million.

2.3 LOAD FORECAST

2.3.1 In April 1992, Hydro's primary load forecast for 1992 was reduced by 1.0 percent while in the same review, its 1993 load forecast was reduced by 0.9 percent. In argument Hydro maintained that its April load forecast was appropriate given its economic forecast and the data available at the time. However, Hydro stated that it did not preclude the possibility of altering the forecast at the time of rate finalization.

Positions of the Parties

2.3.2 Two of the parties, IPPSO and Board Staff, recommended a decrease in the load forecast while the MEA recommended an increase.

2.3.3 IPPSO argued that Hydro's short-term load forecasting failed to recognize that the actual load has been near the bottom or below the lower bandwidth of the short-term load forecast. If this asymmetrical tendency was recognized in the Board's recommendation, IPPSO submitted, it would result in a decrease of 1.0 percent in Hydro's 1993 load forecast.

2.3.4 Board Staff recommended that Hydro re-run its load forecasting models with the reduced GDP figures as outlined by them. It argued that because Hydro did not reduce its load forecast when it reduced its 1992 GDP by 0.5 percent, Hydro was not basing its forecast on its most recent economic data. Hydro pointed out that there were many factors involved in the decision not to alter the load forecast and that it had already been reduced much more than the simple change in the economic forecast would have suggested.

2.3.5 The MEA pointed out that Hydro's forecast of load growth is not in line with its more optimistic growth for the economy as reflected in its GDP forecast. To account for this anomaly it argued that the forecast should be increased by 1.0 percent in spite of the progress made in the demand side management programs and the moderating of demand due to Hydro's price increases.

2.3.6 AMPCO suggested that the price elasticity of demand of 0.06 used by Hydro to reflect the impact of price increases on system demand may be low. AMPCO asserted that Hydro's customers are more price sensitive today and that their response to price changes is likely quicker and more pervasive than Hydro assumes.

Board Findings

2.3.7 The Board is of the opinion that Hydro's estimate of price elasticity may be out-dated for use in the 1990s. The Board is concerned that the relationship between rate increases and system demand may, in the future, be substantially more direct than Hydro's current experience would dictate. Hydro's customers may now be much more proactive in cutting their demand when faced with rate increases and the effect may limit the attainment of Hydro's net income targets.

2.3.8 The Board sees merit in AMPCO's argument that all consumers appear to have become much more price conscious than they were and that this factor, combined with conservation, increased industrial competition, low inflation and major productivity improvements may result in more significant lowering of demand in the face of Hydro's rate increases. The Board is not prepared to make a recommendation regarding the reasonableness of Hydro's price elasticity because all the necessary information is not available but it does urge Hydro to monitor this issue as part of its load forecasting procedure.

2.3.9 In regard to the 1993 load forecast, the Board finds that Hydro's outlook is too optimistic and should be reduced to account for the Board's lowering of the forecast for 1993 GDP growth by 1 percentage point. The affect of this is that Hydro's 1993 load forecast is thereby reduced by 0.56 percent which decreases Hydro's revenue by $35 million.

Recommendation 2.2:

The Board recommends that Hydro's 1993 primary sales forecast be reduced by 0.56 percent. This will reduce Hydro's 1993 revenue by $35 million.

3. ENERGY MANAGEMENT

In 1993 Hydro plans to achieve 350.9 megawatts of demand reductions made up of 297.9 megawatts of load saved and 53 megawatts of load shifted. The 1993 budget for energy management activities is $117 million in operating expenses and $233.1 million in capital expenditures. Staff levels of the Energy Management Branch are forecast to increase to 602 which is an increase of 211 in two years.

3.1 INTRODUCTION

3.1.1 This hearing took place subsequent to Hydro's update of its 1989 Demand/Supply Plan ("DSP") which increased its energy management target for the year 2000 to 5 200 megawatts. That target is made up of 2 225 MW of energy efficiency improvements, 1 275 MW of fuel substitution, 1 000 MW of load shifting and 700 MW from discount demand service. The attainment of that target will enable new utility generation to be deferred until 2009.

3.1.2 The Minister's Reference Letter of April 1, 1992 stated that "policies and long term targets for energy management ... do not require review at this hearing". In consequence the targets were not examined. However, the Board was obliged to examine Hydro's proposals for energy management both for their direct effect on 1993 rates and for their anticipated long-term impact on rates up to the year 2000.

3.1.3 Table 3-1 shows the 1993 forecast in relation to 1991 actual savings and 1992 projections.

TABLE 3-1: DEMAND REDUCTION (MW)

	1991 ACTUAL	1992 BUDGET	1993 FORECAST
Load Saved	212.6	262.6	297.9
Load Shifted	37.9	45.8	53.0
Total	250.4	308.4	350.9

Source: Exhibit 3.4.1

3.1.4 Dr. Sharp, of Hydro, stated that increased efforts in energy management would be required from 1992 to 1993 to make a start on moving towards the revised year 2000 target. She also stated that Hydro plans to spend some $6 billion in the next decade on energy management to attempt to meet the new target. She noted that demand management is thus not a discretionary but an integral part of Hydro's business. Staffing and cost implications required to achieve Hydro's 1993 targets are shown in Table 3-2.

3.1.5 Hydro further testified that in 1991, 15 new programs were added to the existing 32. For 1992 and 1993, 19 new customer programs in total were planned.

3.1.6 Hydro's evidence also indicated that its program monitoring system continues to improve. It drew attention to the issuance of a new staff manual on megawatt tracking guidelines and the establishment of a megawatt review team designed to formulate monitoring policy and review reporting issues.

TABLE 3-2: ENERGY MANAGEMENT FUNCTION COSTS
($ MILLIONS)

	1991 Actual	1992 Budget	1993 Forecast
OM&A Costs	93.3	97.1	115.0
Capital Resources	87.9	149.8	233.1
Minor Fixed Assets	4.0	4.2	1.8
Year End Regular Staff Levels:			
Energy Management Function	391	576	602
Customer Energy Services[1]	307	347	375

[1] Included in Regions Branch Budget.

Source: Exhibit 3.1.4

3.1.7 The evidence relating to Hydro's energy management strategy showed that the Corporation is guided in its demand management actions by two key business principles:

- pursue all programs/initiative options which are cost effective compared to the cost of supply alternatives. This test of cost effectiveness remains the total customer cost test ("TCCT").
- provide opportunities for all customers to benefit from DSM programs by offering a wide menu of programs aimed at all market sectors.

3.1.8 The Board has determined that the relevant energy management issues to be addressed in this chapter are as follows:

- 1993 Energy Management Expenditures
- Selection of Optimal Energy Management Programs

- Monitoring and Evaluation
- Other strategies:
  - Fuel substitution
  - Apartment buildings

3.2 1993 ENERGY MANAGEMENT EXPENDITURES

Positions of the Parties

3.2.1 Board Staff argued that Hydro should defer some demand management programs planned for 1993 which would reduce the 1993 budget and thus mitigate concerns about rate increases. Board Staff noted that although Hydro had not made an estimate of costs in energy savings from any type of short-term deferral of demand side management, Hydro's Chair did concede that moderation in the rate of program introduction was possible.

3.2.2 Board Staff thus recommended a reduction of $10 million from the energy management OM&A budget and $50 million from the capital budget.

3.2.3 The MEA recommended a reduction of $25 million in energy management OM&A for 1993 on the grounds that the proposed growth of this budget, from 1992 to 1993, makes such a reduction achievable.

3.2.4 Energy Probe's evidence showed a fundamental opposition to the energy management program. It suggested that incentives should be stopped to keep rates low, that the programs bring about harmful cross-subsidization, that capitalization of most of these costs is unjustified and that the total customer cost test is unreliable and misleading. It also urged Hydro to study the 1980 report of the Royal Commission on Electrical Power Planning ("the Porter Commission") and follow its advice on flat rate water heating, declining block rates and bulk metering.

3.2.5 The Windsor Utilities Commission proposed eliminating incentive programs. It would reassign the remaining energy management staff to provide information on unsubsidized energy savings.

3.2.6 ADMIC argued that Hydro's general rate increase be reduced by 0.6 percent. It stated this reduction would be equivalent to the energy saving it considered achievable by Hydro in 1993 in the multi-unit residential sector.

3.2.7 At the other end of the spectrum of intervenors on this issue was the CEG which insisted that while the 1993 energy management budget be reallocated, it should certainly not be reduced and, if anything, could be increased. The CEG did however recommend that Hydro generally capitalize all energy programming expenses which would have the effect of reducing 1993 rates by 1.0 percent.

3.2.8 Referring to the MEA's proposed cuts, Hydro argued that energy management is an essential part of the Corporation's business which cannot simply be arbitrarily reduced or cut off without long-term consequences. Hydro opposed all reduction proposals in effect by stating that these imply that energy management is discretionary. Hydro also argued that stop-go-policies in energy management would give a false signal to customers as to the importance of the conservation ethic.

Board Findings

3.2.9 The Board rejects the recommendations of Energy Probe on the grounds that, while it has made some useful comments, the Board is not persuaded that such a far reaching conclusion as the virtual abandonment of the energy management programs is warranted. The Board rejects similar recommendations of the Windsor Utilities Commission.

3.2.10 The Board notes that there is a superficial resemblance between the recommendations of Board Staff and the MEA in that both ask for cuts in the 1993 energy management budget. Where they differ is that Board Staff combined its proposed reduction with specific suggestions for deferring certain programs and a redirection of the balance of the budget towards longer term activities.

3.2.11 The MEA on the other hand stated that a period of more restrained activity and an orderly approach to evaluation is appropriate in view of cost pressures and the capacity surplus situation, and that a cut of $25 million dollars would be achievable in those circumstances. The MEA made no specific suggestions as to which programs to cut.

3.2.12 The Board rejects both Board Staff's and the MEA's budget recommendations for energy management. The Board is concerned that energy management is still evolving and program cuts at this stage may be premature. In arriving at that conclusion however, the Board further finds that energy management expenses must be carefully examined for effectiveness in H.R. 22.

3.2.13 The next section of this Report however, indicates that the Board supports the principle of the related recommendation from Board Staff for a prioritization of the energy management budget.

3.2.14 The Board rejects the CEG's capitalization recommendation for reasons given in Chapter 7.

3.2.15 ADMIC's recommendation is based on a specialized argument which will also be dealt with elsewhere in this chapter.

3.3 SELECTION OF OPTIMAL ENERGY MANAGEMENT PROGRAMS

3.3.1 The following brief list of some of the more important themes will serve as a background to this discussion. All of these themes are matters of disagreement, to one degree or another, between Hydro and various intervenors.

- Hydro's policy of wide ranging programs as opposed to proposals that Hydro re-allocate funds to concentrate on more programming of an in-depth nature.

- Hydro's policy of short-term focus rather than a longer term thrust.

- Hydro's apparent disregard of this Board's recommendations in H.R. 19 and 20 which urged it to concentrate at least initially on the more cost effective areas in industry and commerce.

- Hydro's disagreement with the Board's H.R. 19 and 20 recommendations to consider the possibility of a heavier weighting of the TCCT for load saving benefits.

- Hydro's technocratic view of energy management versus the calls for collaborative activity on programming.

- Hydro's view that its energy management programs are being delivered with a minimum of staff and expenditures versus the argument that too much is being spent on administration to the detriment of expenditures on, for example, improved incentives.

Positions of the Parties

3.3.2 In addition to Board Staff's recommendation that Hydro defer some planned 1993 energy management programs and reduce the program budget, Staff also recommended that a portion of the budget should be redirected to long-term activities. It also expressed concern about Hydro's need to deploy incentives so as to minimize cross-subsidization and ensure that incentives either by accident or design are not used to overcome institutional or regulatory barriers. Board Staff, like certain other intervenors, appeared to be influenced by the CEG evidence furnished by Messrs. Plunkett and Peters which discussed ways whereby Hydro could improve its energy management programs.

3.3.3 Board Staff noted that while Hydro has made progress in coordinating its energy management initiatives with municipalities, such activities should be given higher priority and that specific timetables should be set, particularly in view of the legislation permitting Hydro to permit fuel substitution (Bill 118).

3.3.4 The MEA expressed concern about the escalating cost of energy management programs without a corresponding reduction in demand. The MEA also drew attention to Hydro's substantial capacity surplus in the mid 1990s and contended that this would give Hydro the opportunity to rationalize its programs and cut costs without having much effect on long-term targets. The MEA was also impressed with the Plunkett/Peters evidence to the extent of urging Hydro to concentrate its programs on making sure that long-term opportunities for demand savings were not lost.

3.3.5 The MEA was not impressed however with the CEG's consultants' evidence designed to persuade Hydro to generally raise its incentive levels; the MEA cited the problems of increased free-riders (customers who would otherwise have spent their own money for improvements as opposed to using incentives from Hydro), delays by customers in investing in energy improvements and the worsening of cross-subsidization.

3.3.6 Energy Probe took the position that Hydro should eliminate incentives, charge previous capital expenditures on energy management through to rates in the next three years and eliminate institutionally created barriers to conservation.

3.3.7 ADMIC's views were generally limited to their suggestions for demand reductions by the use of an enriched program for apartment buildings in Ontario which would be based on improved Guaranteed Energy Performance Programs ("GEPP"). ADMIC contended that the uptake of the GEPP program has been very low because of low incentive levels, an inappropriate fuel substitution efficiency formula, complex administration and low interest rates paid by Hydro. ADMIC urged Hydro to work harder to overcome the institutional barriers standing in the way of demand savings in multi-dwelling apartment buildings.

3.3.8 Mr. Plunkett for the CEG stated that, what he viewed as Hydro's waste of resources, fell into two categories namely:

(a) waste associated with possible lost opportunities; and
(b) waste associated with ineffective program expenditures.

3.3.9 With regard to the first category Mr. Plunkett asserted that Hydro does not deal with long-term opportunities for demand savings in an effective way and that some existing programs actually generate such lost opportunities. Examples are programs which do not apply to homes with opportunities to improve appliance, air conditioning, and lighting electrical efficiency, solely because the homes are not heated with electricity. Lost opportunities are also engendered by capping incentives at too low a figure. The CEG extended this concept to urge Hydro to push incentives up to and even beyond full avoided cost on the theory that setting incentives too high in the early stages of program development is better than setting them too low. However, it did acknowledge that high incentives result in higher cross-subsidization from non-participants to participants.

3.3.10 The CEG stressed that Hydro should opt for program depth rather than width. It noted that only in-depth programming could avoid the creation of lost opportunities. It drew attention to the danger of so called cream-skimming inherent in many of Hydro's programs which the CEG characterized as shallow rather than in-depth. The CEG's examples of Hydro's programs which should be deepened, even if other programs were dropped, were Savings by Design and Accelerated Pay-Backs.

3.3.11 In the second matter of so called waste Mr. Plunkett testified that, in his view, Hydro spends too much on programs other than on direct installation and measure incentives. A key point was the CEG's use of comparisons with other utilities which, Mr. Plunkett testified, showed that Hydro spends more to get less effect from its DSM programs than other utilities.

3.3.12 The CEG also took the view that Hydro's information on its DSM activities was inadequate, badly organized and made "informed and efficient reviews by others very difficult".

3.3.13 AMPCO recommended that Hydro review all energy management programs to eliminate those which are inefficient and others that may result in subsidies going from the industrial sector to commercial or residential consumers.

3.3.14 CAESCO urged that Hydro increase its focus on GEPP type programs. It also suggested that Hydro set up a formal consultative group of stakeholders working on DSM to assist Hydro in program design, implementation and evaluation and that some representatives from the DSM industry be appointed to Hydro's Board of Directors.

3.3.15 IPPSO also suggested a collaborative process on energy management programming between Hydro and interested groups; the committee would report to the Board on the progress of such an endeavour.

3.3.16 Hydro reiterated that its policy was one of pursuing all cost effective demand management programs and that this policy was preferable to a more targeted approach. For this reason, Hydro rejected the distinction made by the CEG between discretionary and lost opportunity programs. Though Hydro noted that the CEG evidence was supported to a degree by Board Staff and the MEA, it did not accept that it should target efficient "discretionary" approaches, nor did it accept that it is either losing opportunities for long-term demand savings or creating situations where these lost opportunities will occur. In effect, Hydro asked the Board to reject all of the discretionary/lost opportunity analysis part of the CEG's evidence.

3.3.17 Hydro stated that AMPCO's assertion that there is a low potential for DSM in the industrial sector and thus that sector is subsidizing others, is contradicted by the evidence of AMPCO's own key industrial witnesses.

3.3.18 Hydro rejected the MEA's suggestion for a general review of program cost effectiveness on the grounds that Hydro already does this.

3.3.19 Hydro rejected CAESCO's suggestion that Hydro increase its focus on DSM performance based programs such as GEPP on the grounds that it already recognizes the benefits of a performance based approach.

Board Findings

3.3.20 The Board agrees with Hydro that energy management is the key to reducing the need for new generation facilities. But, at the same time, the Board is concerned that Hydro must control its expenditures in this area to ensure that the costs will not become a similar type of burden on future customers which Darlington is imposing on current customers.

3.3.21 The Board notes that energy management attracted a large volume of evidence and argument. Energy management programming has captured the attention of many interest groups particularly those concerned with conservation. Given the relative novelty of the energy management concept and its applications, compared at least to conventional supply, it is also not surprising that a wide range of views emerged.

3.3.22 Earlier, the Board rejected proposals that Hydro's energy management expenditures and programs be either dispensed with or reduced for 1993. It follows then that the Board finds that Hydro's proposed 1993 overall expenditure on energy management is acceptable. The Board however does have serious reservations about Hydro's priorities within that budget.

3.3.23 On the above matters the Board finds that:

- There is merit in the CEG's proposals for more in-depth programs as exemplified by the proposals on lost opportunities.

- There is evidence that Hydro still has a short-term focus on its programming. The Board notes that this focus means that Hydro runs the risk that its long-term goals may not be achieved in the most cost effective manner.

- Hydro should select its programs on a basis of those which combine a high MW saving with a favourable benefit-cost-ratio.

- Hydro should be open minded to constructive criticism of its policies and programs in this developing and crucial field. Hydro's programs, in consequence, should be designed to be flexible and capable of adaptation as new information emerges from this lively new technology.

- Equity and associated cross-subsidization issues of DSM, in particular, the concerns that incentives are paid for by those who are too poor to take advantage of programs or those who have already invested in conservation, have not been adequately dealt with by Hydro in this hearing.

3.3.24 The Board has serious misgivings about the cost effectiveness of Hydro's demand management programs and its continued reliance upon TCCT to determine their cost effectiveness. In that regard the Board briefly considered recommending that a moratorium be instituted on adding new programs. However, the Board concluded that, on balance, it was preferable to await the evidence in H.R. 22 and will not therefore recommend such a moratorium.

3.3.25 In the meantime, in the Board's view, there is an urgent requirement for Hydro and its stakeholders to undertake more dialogue on energy management programming as guided by paragraph 3.3.22. This paragraph however, lists only those program disagreements regarded as important by the Board; the list is not exhaustive and could be supplemented. The Board recommends that Hydro take an immediate initiative to arrange a series of workshops with stakeholders to further review and develop its energy management programs. These workshops should be chaired by an independent and the Board will require Hydro to prefile a complete report on these workshops as evidence in H.R. 22.

Recommendation 3.1:

The Board recommends that Hydro should immediately arrange a series of workshops with stakeholders to further review and develop its energy management programs in time to file a report in H.R. 22.

3.3.26 The Board is concerned that Hydro appears to consider its energy management budget as a source of funds which it must spend within the time frames outlined and that it does not appear to give proper consideration for the value it receives. In consequence the Board makes the recommendation which follows.

Recommendation 3.2:

The Board recommends that the Minister include in the reference for H.R. 22 a direction for the Board to specifically investigate and examine the cost effectiveness of the programs in Hydro's overall energy management plan.

3.3.27 On one further matter, the CEG also criticized what might be summed up as its view on Hydro's inappropriate distribution of expenditure between programming measures and administration. While the Board finds this line of argument and the information provided by the CEG of interest, it also finds that Hydro's counter arguments are substantial and will make no finding on this matter. In general terms however, the Board suggests that Hydro review these proposals and be in a position to give a more detailed technical and practical response to the CEG's proposal in H.R. 22 than it did in this hearing.

3.4 MONITORING AND EVALUATION

Positions of the Parties

3.4.1 The MEA stated in its final argument that the results of energy management programs are critical especially in view of the magnitude of Hydro's planned expenditure of up to $6 billion dollars by the end of this decade.

3.4.2 In respect of monitoring, Board Staff and the MEA noted that a recent audit on the megawatt tracking system ("MWTS") indicated that the total load impact for 1991 was not 318.8 MW as originally reported but 250.4 MW. In consequence, Board Staff recommended that Hydro should quickly implement its auditors' recommendations on this shortfall. These recommendations point to the improvement of communication and clarifying policies, the provision of interim reports of policies and the provision of more guidance by means of detailed load impact calculations. In addition, Board Staff submitted that engineering estimates should be verified by end use metering or billing analysis.

3.4.3 With respect to evaluation, Board Staff observed that no formal program evaluation takes place before the end of a program when load impact results are tracked as are incentives, OM&A and capital costs. Board Staff noted however that, to date, evaluation plans have not been in place before programs were approved. Board Staff also noted that the New York utilities spent 4 percent of their energy management budgets on evaluation, California about 10 percent and Hydro between 1 percent and 2 percent. Board Staff recommended that increased resources be dedicated to Hydro's program evaluation activities.

3.4.4 The MEA submitted that Hydro must improve and accelerate its efforts in monitoring and impact evaluation. The MEA also noted the revised 1991 demand results of 250.4 MW. It was concerned that the prefiled evidence did not indicate that this revised figure in fact included free riders.

3.4.5 In consequence, the MEA thought the real figure was more likely to be 200 MW. The MEA asked that Hydro present results in future net of free riders and also report both capacity and energy savings. The MEA was also concerned about Hydro's tardiness in developing its efforts in impact evaluation and, like Board Staff, noted the audit which indicated over-reporting of results.

3.4.6 The CEG took issue with the way in which Hydro documents its programs and reports progress related expenditures, which the CEG claimed, made an informed and efficient review of the energy management function very difficult. The CEG wanted Hydro to report both energy and demand savings so that they can be compared directly with Hydro's load forecast. Hydro should, it stated, report the savings which are directly related to each program with the impact of free riders identified and netted out.

Board Findings

3.4.7 The Board urges Hydro to accede to proposals that it should report savings by both energy and demand. The Board notes that Hydro has previously reported energy savings. The Board also requests that Hydro coordinate its monitoring and evaluation documentation so that this Board and interested parties are able to make an independent review of savings.

3.4.8 The Board finds that while there is evidence that Hydro is improving its monitoring and evaluation processes, there is other evidence which indicates that it has more to do in this area.

Recommendation 3.3:

In view of the importance of the monitoring and evaluation process and the evidence which indicates that Hydro has certain measurement problems in this area, the Board recommends that Hydro, while not increasing its energy management budget as a whole, should make further resources available to the monitoring and evaluation functions.

3.5 FUEL SUBSTITUTION

Positions of Parties

3.5.1 Board Staff noted that Hydro's load impact forecasts for fuel substitution for 1992 and 1993 were 24 MW and 50 MW respectively. The 1993 energy management target of 350 MW does not reflect these amounts. Board Staff noted Dr. Sharp's admission that she did not know when fuel substitution programs would be implemented and it recommended that a portion of the energy management budget be allocated for further work in this area.

3.5.2 ADMIC drew the Board's attention to Hydro's disregard of the Board's recommendations in both H.R. 19 and H.R. 20 on fuel substitution which recommended that Hydro develop fuel substitution as a demand management strategy in anticipation of Bill 118.

3.5.3 The CEG also identified fuel switching from electrical heating to other fuels as a significant target for Hydro programs and recommended that Hydro adopt incentives to encourage fuel substitution with the highest priority being given to avoiding lost opportunities.

3.5.4 The MEA expressed no concern on Hydro's inaction on fuel substitution and submitted that such programs not proceed until a complete economic analysis has been done. The MEA shared Hydro's view that offering programs on fuel substitution without knowing the marginal cost of gas supply is unwise. Further, such programs would create cross-subsidies between electricity and non-electricity users. The MEA was of the view that incentive payments for fuel substitution are not appropriate without the benefit of proper economic analysis.

3.5.5 ONGA noted that despite urging, Hydro had done little work on fuel switching and was still at an early stage of planning. Like Board Staff, ONGA noted that Hydro's energy management target for 1993 did not include fuel substitution and that such programs will not apparently begin until 1995. ONGA urged Hydro to proceed with its strategy for fuel substitution, the funding of gas conversions and the use of incentives for alternative fuels in all kinds of new construction.

3.5.6 Hydro's response to all these criticisms was that more analysis is required before any action is taken. It also noted the need for careful communication with other affected parties such as municipal utilities.

Board Findings

3.5.7 The Board finds that Hydro's minimal preparation on fuel substitution and strategies and programs, in the light of the passage of Bill 118, verges on the inexplicable. The Board is not convinced that studies on the marginal costs of other fuels are so difficult as to have been delayed for at least two years. The same comment can be applied to technical feasibility, cost effectiveness and equity.

3.5.8 The Board has no evidence which might explain the fact that Hydro has delayed proper studies in preparation for Bill 118 and it is unimpressed with Hydro's statement that market factors are already encouraging fuel substitution. If this encouragement was decisive, there would be no need for the relevant sections of Bill 118. Hydro is planning for a 1 275 MW demand reduction by the year 2000 based on fuel substitution. This target is approximately a quarter of the total demand management target for the year 2000. In the Board's view continued inaction on this matter by Hydro will threaten the attainment of that target.

Recommendation 3.4:

The Board recommends that Hydro increase its consultation, planning and program design efforts to the maximum extent possible on the

matter of fuel substitution. It should report on its progress in this regard in H.R. 22.

3.6 APARTMENT METERING

3.6.1 Dr. Rhodes of ADMIC spoke on behalf of two groups representing the owners and managers of residential rental properties in Ontario totalling 250,000 apartment suites. He contended that Hydro had not acted on this Board's findings in either H.R. 19 or H.R. 20 in regard to recognizing the need for programming and preparation for fuel substitution. These policies are important, he stated, in that 30 percent of Ontario's 1.2 million apartments are electrically heated.

3.6.2 ADMIC's view was that Hydro was achieving less than 1 percent of its potential energy savings available from those electrically heated apartments. ADMIC concluded that changes to the GEPP would greatly increase energy savings in this important housing stock. In particular, Dr. Rhodes suggested that GEPP incentives be doubled; the project funding limit be raised to 90 percent from 50 percent; and that the programs' administrative complexity should be reduced. ADMIC also proposed that Hydro apply a commercial electricity rate to landlords who in turn would bill tenants at residential rates so as to assist the landlords in the financing of the changeover from electricity to alternative fuels.

3.6.3 Board Staff submitted that an enrichment of the GEPP program directed at the apartment sector at this time would worsen Hydro's financial position. Energy Probe noted that a great number of apartments and commercial suites are still bulk metered and that in its view, Hydro could have eliminated market failures of that type by following up on the Porter Commission recommendations of some 12 years ago.

3.6.4 Hydro stated that it is not prepared to fundamentally alter what it views as broad based programming to reflect the specialized views of ADMIC nor the segment ADMIC represents. Hydro stated that GEPP should not be modified extensively. It contended that given the program is new and quite successful this suggestion be rejected. Hydro agreed with Board Staff that the problem of electrically heated apartments involves institutional and regulatory barriers which are better dealt with by other means. Hydro also rejected ADMIC's plan to save energy by allowing landlords to resell electricity on the grounds that it would turn owners into power distributors thus breaching legislation.

Board Findings

3.6.5 The Board agrees with one part of ADMIC's argument namely that there exists a major opportunity for demand savings in electrically heated apartment blocks by installing individual meters.

3.6.6 The Board also agrees with Hydro's witness Mr. McGee that this issue has to be the most complex in Hydro's commercial marketing efforts. Hydro's evidence indicates that its only relevant program is an information program which advises builders of the benefits of individual metering. Hydro states that it is continuing to try to develop a program beyond this but it would appear to the Board that progress has been minimal to date.

3.6.7 The Board finds that ADMIC's intervention in this hearing has usefully highlighted a major target for the future development of Hydro's DSM programs. ADMIC's intervention has also emphasized that Hydro, in the Board's view, is not ready to deal with fuel substitution nor the even more complex matter of individual metering of apartments.

3.6.8 Those remarks having been made, the Board does not accept ADMIC's proposals as presented in this hearing but does urge Hydro to quickly formulate a plan in conjunction with the municipal utilities to take advantage of the potential energy savings in these areas.

4. NON-UTILITY GENERATION

Hydro forecast total non-utility generation capacity to be 807 MW by the end of 1993, an increase of 267 MW over 1992. The total includes load displacement generation, i.e. power produced by consumers for their own use, which is expected to be 153 MW by the end of 1993, 34 MW above the 1992 level. The Non-Utility Generation Division, with a staff level of 35, has a budget of $4.1 million in 1993 for OM&A costs, $5.6 million for its financial assistance cost and $2.4 million for capital expenditures.

4.1 NON-UTILITY GENERATION

4.1.1 Non-utility generation ("NUG") or parallel generation refers to all generation within Ontario that is neither owned nor operated by Hydro, but which is connected, directly or indirectly, to Hydro's bulk power distribution system. Cogeneration refers to the generation of power for load displacement by end-users or for sale to Hydro in combination with the end users' production of heat, usually in the form of steam, to meet their own process and heating requirements.

4.1.2 Hydro characterizes load displacement as power generated by a customer for its own internal use. Purchase power generation facilities are generally independently owned and built specifically to produce power for sale to Hydro. Power from customer-owned generation in excess of the customer's internal requirements is purchased by Hydro on a contracted basis, or as at-will energy which is available at certain times from the customer and purchased by Hydro as required.

4.1.3 Based on the success of Hydro's NUG program, Hydro's long-term NUG target was increased in September 1991 from 2 107 MW to 3 107 MW by the year 2000. By the end of 1991, Hydro had 461 MW of NUG capacity in service, 290 MW of committed capacity, and a further 666 MW expected from projects with approved rates, representing a total capacity of 1 417 MW from 82 NUG projects.

4.1.4 In addition to these confirmed projects, Hydro was in the final stages of negotiation for 13 other projects, representing a combined capacity of 1 625 MW. Forty other proposals with a combined capacity of 3 444 MW were waiting to be reviewed. Successful completion of the total NUG capacity of 6 486 MW available to the Corporation from confirmed and non-committed projects, would more than double Hydro's year 2000 target.

4.1.5 As a result of the increases in energy management and NUG targets, and the revised load forecast, Hydro identified a potential surplus capacity situation in the mid 1990s and, in December 1991 it suspended negotiations with the 53 outstanding projects pending a review of the situation.

4.1.6 Following the review, Hydro introduced an interim NUG policy which limited the purchase capacity of all non-hydraulic projects to 5 MW or less. Only 13 of the outstanding projects were allowed to continue negotiations but at lower capacity, and the remaining projects were deferred indefinitely.

4.1.7 Hydro indicated that, in addition to the exceptions made for hydraulic and small NUG projects, a limited number of special projects would be permitted. The selection criteria for these projects are to be determined later as part of a NUG policy review.

4.1.8 All projects approved under the interim policy must meet Hydro's new guidelines for preferred generation. The methodology for determining purchase rates for all NUG projects continues to be based on avoided cost principles which have not been changed since H.R. 20.

4.1.9 In addition to curtailing NUG development in general, Hydro also retracted the right of first refusal by a municipality to purchase in-franchise non-utility generation. The withdrawal was described as a necessary interim measure while Hydro studied the ratepayer implications of permitting individual municipalities to purchase electricity directly from non-utility generators. Hydro admitted that it had no statutory right to prohibit load displacement projects or to prevent municipalities from developing their own independent power supplies. Hydro is currently reviewing its policy which permits municipal utilities to own generation facilities.

4.1.10 Hydro's NUG Division maintains a number of programs to enhance the Corporation's NUG strategy. These programs include a communications plan, consultant feasibility assistance, financial assistance, and an energy management audit of government buildings.

4.1.11 In addition to the current programs, the NUG Division is developing programs in three new areas: NUGs for remote communities, alternate technologies, and small-package cogeneration for load displacement. Any further program development has been delayed and is being reviewed in light of Hydro's supply requirements.

4.1.12 IPPSO called evidence which would require the Corporation to acquire 250 MW of preferred NUG capacity per year; implement a research, development and demonstration program on new NUG technology; introduce a program to capture lost opportunities in cogeneration applications; and upgrade the transmission system to accommodate further NUG development. IPPSO submitted that this would reduce lead-times, improve the NUG resource mix, and provide environmental benefits.

Positions of the Parties

4.1.13 Board Staff submitted that Hydro's interim policy was acceptable for the 1993 rate year but recommended that Hydro raise the capacity limit for acceptable NUG projects, define the requirements for special projects, and use competitive bidding for any future acquisitions. They also submitted that the right of first refusal should be withheld until the issues of wheeling and third party access are studied further.

4.1.14 In general, the MEA supported Hydro's interim policy, but found that Hydro's preference for renewable resources and high-efficiency energy conversion technology was in conflict with the Corporation's goal to minimize electricity rates. Accordingly the MEA, like Energy Probe, recommended that Hydro should discontinue the 10 percent avoided-cost premium for preferred NUG projects. The MEA also submitted that the Board should reject the proposals put forward by IPPSO, and adopt criteria for special projects which will provide ratepayer benefits. Along with Energy Probe, the MEA also recommended that Hydro resolve the right-of-first-refusal issue and, by the end of 1992, set a policy regarding municipal utility NUG acquisition.

4.1.15 As pointed out by the MEA, deferring NUG acquisitions during periods of excess capacity will reduce supply costs and maximize long-term benefits for the utility. The MEA further submitted that the NUG industry had not been adversely affected and that it would be able to respond to Hydro's future needs, if and when required.

4.1.16 With regard to performance measures, the MEA suggested that Hydro's NUG program should be evaluated based on the NUG Division's ability to match acquisitions with system needs and to minimize acquisition costs, and not on the number of projects or amount of capacity acquired. Together with Energy Probe, it also questioned the need for Hydro to provide financial assistance to NUG projects, and recommended that it develop cost-effective measures to evaluate the effectiveness of the program.

4.1.17 IPPSO submitted that, even in a period of surplus capacity, preferred NUGs still have substantial value in that they provide environmental, social, cost and diversity benefits to ratepayers. To properly recognize these benefits, IPPSO recommended that Hydro introduce a separate rate for preferred NUG proposals and implement a formal procurement program for environmentally beneficial NUG projects. IPPSO also recommended that Hydro re-evaluate the need and size of its 10 percent premium for preferred projects.

4.1.18 IPPSO contended that Hydro's curtailment of NUG development had created lost opportunities and adversely affected the NUG industry which in turn reduced the competitiveness of all businesses in Ontario. To reverse these detrimental effects, IPPSO recommended that Hydro introduce programs to prevent lost opportunities in cogeneration and, along with CAESCO, it recommended that the responsibility for small load displacement projects be reassigned to the Energy Management Branch of the Corporation.

4.1.19 In addition to program and policy changes, IPPSO recommended that Hydro develop a plan to overcome certain transmission barriers to NUG development. It also urged that Hydro reinstate the $8 million investment in alternate energy technologies.

4.1.20 IPPSO and Energy Probe submitted that Hydro's NUG Division was overstaffed considering the reduction in procurement activity. Consequently, IPPSO recommended that Hydro review its budget and staffing levels of its NUG Division and reduce or reallocate at least 10 staff and at least $1.5 million of the annual OM&A budget.

4.1.21 The CEG submitted that Hydro's interim policy of placing arbitrary limits on future NUG projects could create a number of negative impacts, including lost opportunities. The CEG recommended that Hydro should reverse its existing policy, and focus on NUG resources which offer environmental and economic benefits to the system, such as increased flexibility and lower costs.

4.1.22 To ensure a reliable and affordable supply of electricity in the future, AMPCO recommended that Hydro be directed to prepare a NUG strategy which would minimize the lead time and cost of adding NUG capacity to meet unexpected increases in demand or significant in-service delays at Darlington.

4.1.23 Although non-utility generation has economic, environmental and efficiency benefits, Energy Probe contended that subsidized consulting and financial programs were unnecessary, especially for load displacement projects. Consequently Energy Probe recommended that Hydro eliminate free-ridership, cancel the financial assistance program and revise its consulting program based on user-pay principles.

4.1.24 The Seaway Valley Farmers Energy Co-operative submitted that Hydro's current NUG policies have three critical deficiencies: the 10 percent premium for preferred generation does not properly reflect the environmental benefits from specific NUG projects and technologies; economic diversity, regional economic development, and social benefits are not considered adequately; and special projects have not been defined.

4.1.25 The Windsor Utilities Commission submitted that non-utility generation is available at favourable prices when compared to Hydro's wholesale rates and that the Corporation could reduce its unit cost of power through long-term contracts with these low cost suppliers.

4.1.26 In reply, Hydro stated that it recognized the possibility of lost opportunities and that it designed its interim NUG policy to minimize these losses and their potential rate impact.

4.1.27 In accommodating future NUG projects, Hydro argued that it planned to investigate transmission access for NUG development and to set the criteria for special projects. Hydro also argued that the NUG Division should continue to maintain the existing NUG programs and develop new programs and performance measures. Hydro contended that its financial assistance programs were required to increase flexibility in contract negotiations and that competitive bidding would be considered for future NUG solicitation.

4.1.28 While recognizing that changes in direction may have an effect on NUG resources, Hydro rejected the recommendations of IPPSO and Energy Probe for staff and budget cuts in the NUG Division and submitted that the 1992 and 1993 OM&A budgets for the Division had already been reduced to reflect the change in direction of the NUG business.

4.1.29 With regard to the right of first refusal, Hydro argued that it was inappropriate for one municipal utility to benefit at the expense of other utilities and that Hydro is attempting to be fair to the utilities, suppliers, and all electricity customers.

Board Findings

4.1.30 The Board agrees with Hydro and virtually all intervenors that NUGs should continue to form an important part of Ontario's capacity options. Generally speaking NUGs, because of their smaller size, can be more environmentally benign than their larger utility cousins, have shorter lead times and tend to shift the risk of non-performance to the private sector while avoiding large public expenditures.

4.1.31 However, for 1993 and probably beyond, the Board agrees with Hydro, Board Staff and the MEA that there is no current requirement for significant amounts of generation from the private sector and that in the main, Hydro's moratorium policies are reasonable. The Board is of the opinion that the amount of new NUG capacity should be essentially driven by the effect of that extra capacity on rate levels.

4.1.32 With the development of most new NUGs being postponed, and cost-cutting being the byword for 1993, the Board notes that Hydro has effected a substantial cut in its 1993 capital expenditures from $12.2 million to $2.4 million.

4.1.33 IPPSO recommended that the small environmentally and socially preferred NUGs should have separate goals from the major-supply NUGs and that Hydro should take advantage of its current generation surplus to encourage them. Insofar as Hydro's ratepayers are not thereby disadvantaged in this era of surplus generation, the Board agrees with this submission.

Recommendation 4.1:

The Board recommends that Hydro should prepare and publicize a distinct set of goals designed to encourage small environmentally and socially preferred non-utility generation.

4.1.34 However, it does not agree with IPPSO and Board Staff's proposals that Hydro should make some accommodation now in order not to lose potential major-supply NUG capacity in the future. Both these parties argued that by suspending its current NUG policy and curtailing or deferring all major-supply NUGs, Hydro would suffer a permanent loss of capacity because companies will now build their units to accommodate their internal needs only and will be economically unable to add NUG capacity later.

4.1.35 In the Board's opinion, this reasoning ignores two fundamental points:

- The fact that Hydro's target for NUG capacity to the year 2000 can be met from current applications, indicates an acceptance of NUGs that should survive the present moratorium and therefore NUG applications from private companies should materialize; and
- At least for the remaining lives of the nuclear generating stations, Hydro will continue to be the major producer of electricity in Ontario. NUGs will form an important part of the supply mix but, barring a major unforeseen change in circumstances, they will continue to be the swing suppliers for a long time to come.

4.1.36 The lost opportunities resulting from Hydro's moratorium are not permanent, they are just postponed and move to the back of what appears to be a very long line of anxious NUG developers.

4.1.37 Therefore in the Board's opinion, if Hydro's forecast of future demand to the end of this decade is even remotely correct, Ontario should have sufficient capacity to meet its needs from Hydro's own resources and those NUG proposals which are currently before Hydro.

4.1.38 As well, in these times of generation surplus, the Board agrees with the MEA that the preference for environmentally benign generation need not extend to the payment of premiums except under extraordinary circumstances. The same reasoning, i.e. avoiding unnecessary expenditures, applies to IPPSO's argument that Hydro should upgrade its transmission system to eliminate any barriers in the way of major-supply NUGs. In the same vein, the Board also rejects IPPSO's submission that Hydro should reinstate and expand its $8 million budget for alternate energy technology.

4.1.39 As well, the Board agrees with Energy Probe and the MEA that performance measures for the NUG Division should be implemented to reflect the effectiveness of its price negotiations with NUG developers and the Division's ability to match NUG acquisition with system needs. For 1993, this latter criterion should signify a further downgrading in the Division's budget to reflect the diminished importance of NUGs in a time of over-supply.

4.1.40 On the same theme, the Board agrees with Energy Probe and the MEA that in times of over-supply, Hydro's ratepayers should not be required to pay to encourage private developers to build load displacement NUGs which will simply exacerbate the problem. In this regard, the Board was not persuaded by Hydro's argument that the funds offered under the program provided the Corporation with flexibility in negotiations and allowed it to recognize the value of the electricity generated by the customer. Taking into account the current generating surplus, the poor state of the economy, the size of the proposed rate increase and the fact that load displacement NUGs should calculate their economic viability on their real costs, the Board recommends that the Financial Assistance Program be stayed and re-evaluated when the NUG moratorium is lifted.

4.1.41 In making the following recommendation the Board notes that Hydro's 1993 budget under the Financial Assistance Program was reduced from $15 million to $5.6 million and the evidence indicated that this amount is committed to servicing existing loans.

Recommendation 4.2:

The Board recommends that no further financial assistance be given for the development of any new non-utility generation project during this period of over-supply, except when required for small environmentally and socially preferred projects.

4.1.42 The MEA made reference to the policy review currently being undertaken by Hydro in regard to the right of individual municipal electrical utilities to contract directly with NUGs. It recommended that Hydro's review be completed by the end of this year with the cooperation of the MEA and during testimony Hydro agreed. Under normal circumstances, this issue will therefore become part of H.R. 22 and the Board will comment on it following that review.

4.1.43 The Board does not agree with Windsor Utilities Commission that Hydro could achieve long term savings by contracting now for cheap power from NUGs. The Board feels that such contracts may only serve to increase the unit costs of Hydro's own generation because of the over-supply.

4.1.44 In this era of over-supply, the Board is of the opinion that the CEG's recommendation that Hydro should accept NUGs of any size if they contribute environmental and economic benefits to the system, may have the same result as Hydro's moratorium, but for different reasons. Because the current over-supply would dictate an increase in Hydro's unit costs if more NUGs were brought on stream, under the CEG's recommendation those NUGs would probably be uneconomic and thus rejected. This presumes that Hydro can maintain emission limits on its coal-fired generation.

4.1.45 The CEG advocated that Hydro in approving NUG applications should include in its assessment the full monetization of Hydro's environmental costs. The Board notes that the issue is currently before the Environmental Assessment Board. As well, it should be kept in mind that most of these costs attributable to Hydro will be for disposing of irradiated nuclear fuel and decommissioning nuclear stations. The addition of more irradiated fuel should not greatly affect that disposal bill and, with the exception of the two units of Darlington which have not yet been activated, decommissioning costs are not greatly increased by the continued operation of the stations. Thus, it appears that, except for coal-fired emission standards which are a matter of law, Hydro's environmental externalities may be relatively fixed provided the Corporation does not add more major generation. In the short run therefore, the Board does not feel that any environmental costs should be included in determining whether to accept NUGs, except those costs which Hydro currently employs.

4.1.46 With the comments elsewhere in this Report in regard to over-supply and the Darlington in-service dates, the Board does not see the necessity for AMPCO's concern that NUG capacity should be used in case Darlington is delayed or there is an unexpected surge in demand.

4.1.47 On the other end of the argument spectrum, Energy Probe's continued theme of free-ridership appears to the Board to be somewhat over-worked in the area of NUG development and in light of the moratorium on NUGs no recommendation by the Board is necessary.

4.1.48 As well, the Board agrees with the concept of competitive bidding for future NUGs which was advocated by Board Staff and the MEA. The Board notes that Hydro is studying the concept and that the current over-supply situation does not demand an immediate answer.

4.2 WHEELING AND THIRD PARTY ACCESS

Introduction

4.2.1 In brief terms, wheeling is an arrangement whereby an independent generator such as a NUG can use a monopoly transmission grid, like Hydro's, to move power to its customer. Third Party Access ("TPA"), on the other hand, is an arrangement whereby the central dispatch system of a utility is open to all generators. This would establish a market in which competition with the former monopoly generator would ensue.

4.2.2 Energy Probe submitted evidence on wheeling and TPA prepared by Dr. Ruff who has been a consultant in this field since 1985; his experience included a two year period as principal advisor to the English Regional Distribution companies during the creation of that country's competitive electricity system.

4.2.3 Dr. Ruff observed that Hydro permitted wheeling from an independent generator to a customer provided both were part of the same corporate entity; it did not permit generators to wheel power to unrelated customers. Dr. Ruff was of the view that this restriction had no obvious technical basis but appeared to him to be set up to prevent such wheeling transactions from becoming significant in Hydro's operation. However, Dr. Ruff's general view was that for a variety of technical and commercial reasons, wheeling as such was not a large scale activity in many electrical systems. He further stated that if competition in electricity supply was restricted to simple wheeling, that it would not amount to much or be particularly effective or efficient.

4.2.4 On the other hand, Dr. Ruff testified that if open access to the real monopoly asset, namely the transmission system, was allowed, effective competition in supplying electricity would be a reality. He emphasized that it was important to distinguish between transmission as such and the central dispatch system of the monopoly. Dr. Ruff referred to the latter as an infrastructure monopoly and testified that unless this infrastructure was made available to competitors on a non-discriminating basis, independent generators could not compete on equal terms with the monopoly's generating units.

4.2.5 Dr. Ruff asserted that, if Ontario decided to go in this direction, innovative NUG deals would emerge to achieve cost reductions. He noted that whether Hydro would continue to remain a major player in the new generation market would depend on its ability to meet the competitive challenge of new generators. The transmission grid however would remain in Hydro's ownership but its use would no longer be restricted to Hydro.

Positions of the Parties

4.2.6 Board Staff submitted that the evidence on TPA was insufficient for the Board to determine if its introduction was in the best interests of Hydro's customers. In Board Staff's view the introduction of TPA should not be recommended by the Board in the 1993 rate year. On the other hand Board Staff urged that the Board not be swayed by Hydro's arguments that TPA is too complex, costly, difficult and in use in a very few locations. Board Staff considered nevertheless that TPA's possibilities for cost cutting would certainly commend its implementation to Hydro's customers, particularly at present. In conclusion, Board Staff submitted that the Board should recommend that the issues of wheeling and TPA be discussed by this Board or by some other forum to determine if its use is in the best interests of Hydro's customers.

4.2.7 The MEA had a number of objections to TPA. It submitted that for the Board to adopt or move towards Dr. Ruff's TPA model would be to undermine the role of the Environmental Assessment Board presently dealing with DSP. It recommended that Dr. Ruff's proposals be rejected.

4.2.8 Hydro's position was that there is no need to further explore TPA at this time. It agreed with the MEA and Windsor Utilities Commission that the Board not recommend implementation of TPA. It further submitted that there is no need for radical measures such as TPA on the grounds of improving Hydro's competitiveness, because Hydro makes continuous efforts to increase its financial soundness and improve its efficiency in any event.

Board Findings

4.2.9 The Board is of the view that Energy Probe's position that more extensive wheeling and the introduction of third party access to Hydro's operations are products of its dissatisfaction with Ontario Hydro's present performance. This view of the Board will be referred to again in Chapter 12 on General Policy.

4.2.10 The Board notes that should Hydro continue to have difficulty retaining the confidence of its major customers, TPA would likely attract more interest and support. It is the Board's view that proceeding further with a concept such as this would require a specific reference from the Minister because TPA strikes directly at the heart of Hydro's monopolistic position.

4.2.11 On the matter of wheeling, the Board finds that, while in principle, Hydro ought to lift its restriction, it would be inappropriate to do so in light of Hydro's generation surplus.

5. FUEL AND FUEL-RELATED COSTS AND SECONDARY SALES

For the 1993 rate year, Hydro forecast $439 million in nuclear fuel costs and $554 million in fossil fuel costs. The balance of the fuel cost portion of the budget is made up by water rentals, internally used power and costs related to commissioning energy. The portion of the budget involving fuel related costs includes $228 million in power purchases and $8 million for payments under the Nuclear Payback Agreement. Secondary sales, which involve a credit to these amounts, were forecast to be $120 million. All these amounts result in a 1993 budget of $1,185 million which is a decrease of $200 million from 1992.

5.1 INTRODUCTION

5.1.1 Electricity production from all sources is based on the Consistent Energy Set ("CES") which was updated in May 1992. As outlined in Table 5-1, the nuclear portion of total resources for 1993 is 56 percent, followed by hydraulic at 24 percent, and fossil at 16 percent. Non-utility generation purchases in 1993 are forecast to be 3 percent or 3.9 Twh, an increase of 1.4 Twh over 1992.

5.1.2 Secondary sales, derived from selling surplus power, are forecast at 4.0 Twh, an increase of 2.5 Twh over 1992.

TABLE 5-1: ELECTRICITY PRODUCTION PURCHASES AND SALES (TW.h)

		Final Update	
Particulars	**Actual 1991**	**1992**	**1993**
Nuclear	68.7	64.0	82.4
Hydraulic	33.9	36.1	36.1
Fossil	30.0	33.9	24.0
Commissioning	2.1	1.8	0.7
Purchases			
Outside Ontario	2.2	2.3	0.4
NUG Purchases	2.0	2.5	3.9
Other Interchanges	0.1	—	0.1
Total Resources	139.1	140.6	147.5
Secondary Electricity Sales	(2.1)	(1.5)	(4.0)
Total System Primary Demand	**137.0**	**139.1**	**143.5**

— Denotes less than 0.1 but greater than zero.

Sources: Main Submission - Table 5-3
Exhibit 5.1.3 - Final Update

5.1.3 The values of electricity production from all sources are based on the CES and are shown in Table 5-2.

5.1.4 The following areas raised by the parties are commented upon by the Board:

- Darlington In-service Dates
- Capability Factors for Nuclear, Fossil and Hydraulic Generation
- Other Issues: Secondary Sales, Environmental Dispatch and Externalities

TABLE 5-2: FUEL AND FUEL-RELATED COSTS
($ MILLIONS)

Particulars	Actual 1991	Final Update 1992	Final Update 1993
Fuel Used for Electric Generation			
Fossil	765	868	554
Nuclear	353	361	439
Internal Transfers	(1)	(40)	(52)
Other Water Rentals	10	7	7
	1,128	1,195	949
Power Purchased	151	182	228
Nuclear Agreement - Payback	(6)	8	6
Total	1,273	1,385	1,183

Sources: Main Submission - Table 5-1
Exhibit 1.1.4 - Final Update

5.2 DARLINGTON IN-SERVICE DATES

5.2.1 As shown in Table 5-3, Hydro anticipates an in-service date of August 1992 for Darlington units 1 and 3, March 1993 for unit 4, and a return-to-service date of September 1992 for unit 2. All of the proposed dates represent a delay from the dates assumed by Hydro in earlier hearings.

5.2.2 The current problem is the fuel bundle damage discovered three months after unit 2 was brought into service in October 1990. The unit has remained shut down since that time. Unit 1 operated at full power for two months till March 1991 and was shut down to inspect for similar fuel bundle damage. The unit was restarted in August of that year but shut down again in January 1992 due to evidence of some end plate cracking and bearing pad wear. Tests indicated the cause to be excessive vibration.

TABLE 5-3: DARLINGTON IN-SERVICE DATES

	HR 19 Proposal	HR 19 Update	HR 20 Proposal	HR 20 Update	HR 21 Proposal
Unit 2	July 1990	Oct 1990 In-Service	Return May 1991	Return Nov 1991	Return Sep 1992
Unit 1	Feb 1991		Apr 1991	Nov 1991	Aug 1992
Unit 3	Dec 1991		June 1992		Aug 1992
Unit 4	Dec 1992		Mar 1993		Mar 1993

Sources: H.R. 20 Report
H.R. 21 - Exhibit 6.1.6

5.2.3 Hydro indicated in its prefiled evidence that there was considerable uncertainty associated with the forecast level of nuclear production due to these and other technical problems.

5.2.4 Hydro testified that it hoped to resolve the current vibration problem by replacing the five-vane impeller with a seven-vane impeller. To the extent that the tests are unfavourable, Hydro's business planning assumptions involved piping modifications which resulted in the following alternative in-service dates:

Unit 1: May 1993
Unit 2: August 1993 (return to service)
Unit 3: January 1993
Unit 4: June 1993

Positions of the Parties

5.2.5 Board Staff, IPPSO, and the MEA recommended using the alternate dates for the start of Darlington in-service energy production which would reduce the revenue requirement by $176 million for 1993 because the Darlington costs would continue to be capitalized.

5.2.6 The CEG recommended no delay in the assumed in-service dates, while Energy Probe submitted that units 3 and 4 should not be made radioactive until units 1 and 2 demonstrate sustained good operations over at least a two month period.

5.2.7 In reply, Hydro reiterated that there remains significant uncertainty in the resolution of the Darlington problems and that some further delays are likely. Hydro updated the Board on the status of the Darlington units as of July 15, 1992, pointing out that the reactor of unit 1 was at 75 percent power, preparing to operate at full power for a three month test which should provide essential information on the fuel bundle bearing pad wear. The operation of the other units is dependent on progress with these tests.

5.2.8 AMPCO recommended that Hydro develop a short term contingency plan for the NUG Division that takes into account the possibility that Darlington's in-service date is substantially delayed.

5.2.9 Hydro argued that the earliest additional NUG facilities can be available is 1995, which limits their ability to respond to any Darlington in-service delays.

Board Findings

5.2.10 Hydro's Corporate Forecast Manager for the Power Systems Operations Division, Mr. Murphy stated that:

> 1992 can best be characterized as a year of uncertainty. (Hydro is) ... planning on the basis of having three Darlington units producing power by late this summer, but there continues to be a lot of uncertainty surrounding this assumption. A second uncertainty is with the emerging steam generator problems at Pickering B and at Bruce A.

The quote led off Hydro's direct evidence in the area of fuel and fuel related costs. Mr. Murphy went on to testify that the uncertainty in regard to Darlington extended into 1993, but that Hydro was still expecting the station to be fully in-service during that year.

5.2.11 In light of the fact that the primary evidence in regard to the impeller tests was not available during the hearing, it is not difficult to see the reasonableness of the intervenors' position that, for rate setting purposes, the Darlington in-service dates should be postponed. Most of the key test results are not yet available and those that are, are inconclusive. For example, a recent three week test with the new impellers on unit 1 still showed bearing pad wear but significant progress on the pressure tube pulses which caused the bundles to rock back and forth cracking the end plates.

5.2.12 It would appear that definitive results of the impeller tests may not be available until early October - long after this report is issued but prior to the final rate-setting process undertaken by Hydro's Board of Directors.

5.2.13 With that in mind, this Board is aware that its conclusions contained herein will probably be overtaken by the events of the next two months. However, the Minister and Hydro's Board will still be able to examine these conclusions and amend them in light of the evidence available following the latest tests.

5.2.14 Hydro's forecasting of in-service dates for Darlington came under widespread criticism from many parties to the hearing. Energy Probe led the way in this criticism and argued that the Board should not depend on any short-term energy production from Darlington because it would be too speculative.

5.2.15 The Board agrees that there is general uncertainty over Darlington and is of the opinion that it would not be reasonable to recommend that 1993 rates be set on the basis that Hydro will meet all of its current Darlington in-service dates. Any miscalculation in the engineering estimates is likely to throw off the in-service dates by enough time to seriously affect the revenue requirement.

5.2.16 The whole operation of attempting to dampen the pulses in the pressure tubes is new to Hydro and because of the importance of being right, the engineering and its attendant testing must be conservative. As Mr. Daly, Hydro's Technical Superintendent in the Nuclear Operating Standards Department, testified "... we want to get ... the best permanent solution. ... I think experience has shown that it is best to fix these things up ... permanently, and then get going."

5.2.17 For 1993 rate review purposes the Board will accept that the solution to the Darlington pulsation problem probably lies with a combination of the seven-vane impeller and some re-piping. Therefore, based on the evidence as presented, the Board is not convinced that Hydro can meet its deadline in regard to the in-service/return to service dates for any Darlington unit. The degree of uncertainty in Hydro's evidence was obvious and, in addition, Hydro's track record on forecasting in-service dates for this station does not inspire confidence. For example, in H.R. 19, unit 3 was expected to be on-line in December 1991; in H.R. 20 it was forecast to start six months later and in this hearing the date was given as August 1992 which obviously cannot be kept.

5.2.18 For 1993 rate review purposes therefore, the Board has determined that each unit at Darlington should be fully operational three months after it is currently forecast to be in service. The effect of this is that the first three units will be operating by the end of 1992 and that 1993 rates will only be affected by a three month delay in unit 4. This, according to Hydro, will reduce the 1993 revenue requirement by approximately $36 million per month delay.

Recommendation 5.1:

The Board recommends that 1993 rates be set on the basis that all units at Darlington will not be brought into service until three months later than Hydro's current forecast. This reduces the 1993 revenue requirement by $108 million.

5.3 CAPABILITY FACTORS FOR NUCLEAR, FOSSIL AND HYDRAULIC GENERATION

5.3.1 In 1993, electricity production from in-service nuclear units is forecast to be 82.4 TWh, an increase of 18.4 TWh over 1992. The increase is primarily due to the anticipated full year of production from Darlington units 1, 2, and 3 and a partial year of production from unit 4. Major outages scheduled for 1993 include spacer location and re-positioning outages on Bruce units 3 and 4, the completion of the re-tubing of Pickering unit 4 and a vacuum building outage at Bruce A.

5.3.2 Hydro forecast a nuclear capability factor of 70.9 percent in 1993 including Darlington and 73.7 percent excluding Darlington. The evidence indicated that variances from the budgeted capability factors for the years 1987 to 1991 have been unfavourable for Hydro. Hydro explained that the variances in "A" stations were the result of greater than expected forced outages. The predominant factor in 1991 was the forced outage at Darlington.

5.3.3 Hydro testified to certain improvements made to the forecasting process and noted that by removing the Darlington unit 2 forced outage for 1991, the actual probability factor was greater than forecast.

5.3.4 As an alternative to Energy Probe's proposal for the use of a simple regression-type model for forecasting short and long-term nuclear capability factors, Hydro is developing a probabilistic based forecast model for short, mid and long-term forecasting for all nuclear stations, to be used in parallel to its methodology used for CES input purposes.

5.3.5 In 1993, electricity production from hydraulic resources was forecast to be 36.1 TWh, the same level as projected for 1992. Hydro indicated that the forecast was at the long-term historic median level.

5.3.6 Electricity production from fossil resources was forecast to be 24.0 TWh, a decrease of 9.9 TWh over 1992. The decrease was primarily due to the anticipated increase in nuclear production as fossil resources were primarily used for peaking.

Positions of the Parties

5.3.7 Board Staff contended that forecast accuracy can be controlled by altering planned outages and that this was a significant factor in 1991. It stated that the Darlington delay, all other things being equal, will not affect nuclear capability, but Hydro may delay planned outages from 1992 into 1993 to maintain the capability close to budget levels. It submitted that the nuclear capability factor should be lowered by 1 percentage point to reflect the pressure on Hydro to defer some of its 1992 planned outages into 1993. Board Staff submitted that a further 1 percentage point reduction was required to reflect some probability of the steam generator problem increasing the nuclear incapability. Hydro acknowledged that a hard deposit build-up on the tube support plates has caused derating of Bruce units 1 and 2 and that it is anticipated to affect units 3 and 4.

Acceptance of Board Staff's suggestions would reduce net income by $34 million in the 1993 rate year.

5.3.8 The MEA noted Hydro's poor forecasting accuracy and submitted that Hydro should quickly improve its forecasting of nuclear capability factors. It took issue with Hydro's reasoning for not wanting to rely on regression-based approaches.

5.3.9 Energy Probe also made reference to Hydro's consistent optimistic record in forecasting nuclear capability factors, and suggested that Hydro use regression analyses exclusively. For the 1993 rate year, Energy Probe recommended that the forecast for nuclear production be reduced by 5 TWh resulting in a decrease of $69 million to net income.

5.3.10 Hydro stated that it will continue to utilize a number of other forecast methodologies, including, but not limited to, regression-based methods, as an independent check on the short term nuclear forecast, but it is reluctant to use any one single methodology exclusively for long-term forecasts.

5.3.11 Board Staff and the MEA were the only parties to comment on the hydraulic reliability indices forecasts. Both noted that past forecasts were over-optimistic but no recommendations were made to adjust Hydro's forecast in this regard for 1993.

5.3.12 The MEA was the only party to make recommendations regarding Hydro's energy production forecast from fossil resources. It recommended that Hydro revise the 37 percent fossil incapability factor forecast upward on the grounds that Hydro's past forecasts of this factor proved overly optimistic. Hydro stated that its forecasts of fossil incapability for 1992 and 1993 were about 10 percent higher than the forecasts for 1990 and 1991 which, in Hydro's view, reflected its practice of regularly updating the fossil incapability forecast to reflect past experience and current circumstances.

Board Findings

5.3.13 The biggest determinant of fuel and fuel related costs is the mix of generation which Hydro forecasts it will need to produce the required energy for the rate year. To measure the expected performance of each unit, Hydro uses capability factors which represent the total amount of energy generated as a percentage of what that unit can produce. The generation mix normally assumes that each nuclear unit, as a baseload unit, will produce as much energy as possible.

5.3.14 Hydro's recent record of forecasting nuclear capability factors has not been very good. Hydro has consistently over-estimated the amount of nuclear energy it would produce and this has caused higher than expected costs because the shortfall, at least in part, had to be generated by coal.

5.3.15 However for normal weather, the evidence showed that in 1992, Hydro may have this situation under control. Mr. Daly testified that for the first four months of this year, Hydro was on target and he expected the first six months of 1992 to be very close to forecast. The results during the rest of the year depended on Darlington, he said.

5.3.16 In regard to the steam generators at Bruce A and Pickering B, Hydro testified that the problems are a risk to the nuclear capability forecast but that it has taken that risk into account. The Board will therefore not recommend lower capability factors for those stations as suggested by Staff. The Board accepts Hydro's capability factors for all nuclear stations, as well as Hydro's forecast capability factors from hydraulic and fossil resources.

5.3.17 Several of the intervenors took issue with Hydro's procedure for forecasting capability factors and urged the Board to recommend changes to the models or the use of new ones. The Board is of the opinion that the use of one model in preference to another is a judgment that is best left to those who use the models and under normal circumstances, should not be the subject matter of a recommendation of this Board unless a particular model is outside the bounds of professional judgment.

5.4 OTHER ISSUES: SECONDARY SALES, ENVIRONMENTAL DISPATCH AND EXTERNALITIES

5.4.1 In 1993, secondary sales are forecast to be 4.0 TWh, an increase of 2.5 TWh over 1992. The forecast sales level represents revenue of $120 million. Hydro stated that it will continue to sell surplus power to increase net revenue, noting that as the forecast of production from nuclear and fossil generation varies, the forecast of secondary sales will change.

5.4.2 Other than IPPSO, all parties' comments on Hydro's forecast were the result of recommendations made on other matters which indirectly impact secondary sales. IPPSO, however, suggested a decrease to the forecast level of secondary sales on the grounds that past experience shows Hydro's forecasts in this regard are often too high.

5.4.3 Also on behalf of IPPSO, Ms Schilberg introduced the concept of environmental dispatch, a method of placing and incorporating dollar values on air emissions and other environmental externalities in the day to day operating production scheduling decisions of any electric utility. Her evidence was that Hydro's current dispatch decisions lead to less NUG generation, which is more environmentally acceptable, and more fossil fuel generation, which is not.

5.4.4 IPPSO argued that Hydro should prepare and table in H.R. 22 a detailed analysis incorporating environmental dispatch. The MEA argued that Hydro should not change its practices at this time on the grounds that there is in effect no dispatchable NUG on the Ontario Hydro system, no other jurisdiction in North America has implemented Ms Schilberg's proposed method, and that the issue of monetizing externalities is a Demand/Supply

Plan matter currently under consideration by the Environmental Assessment Board. It was also Board Staff's suggestion that the issue be visited after the EAB findings are available.

5.4.5 Hydro testified that it dispatches all of its generating resources on an economic basis and in compliance with applicable regulations, including acid gas constraints. It testified that its acid gas emissions have always been below the limit set by the Ontario government and will be again for 1993. The evidence revealed that Hydro may run its fossil stations up to its acid gas regulatory limits, exporting any surplus power. IPPSO was the only party that took issue with Hydro's practice and recommended that it end immediately.

Board Findings

5.4.6 The Board accepts Hydro's forecast of secondary sales in the rate year. Insofar as the question of environmental dispatch is concerned, the Board agrees with Board Staff that this matter is best dealt with following the EAB's Report.

6. BUSINESS PLANNING AND BUDGETING OM&A AND CAPITAL

Hydro's total OM&A budget for 1993 amounts to $2.31 billion. Part I of this Chapter addresses Hydro's annual business planning process and budget plan preparation. Part II addresses major cost items in the OM&A budget as well as the capital expenditures for 1993 which total $3.5 billion.

6.1 BUSINESS PLANNING AND BUDGETING

Introduction

6.1.1 The business planning process was described by Hydro as the implementation of corporate strategy by providing a long-term framework within which major programming directions and short-term budgeting guidelines are established.

6.1.2 A significant change in the process was introduced in early 1991 and was reviewed in H.R. 20. In response to poor economic conditions in the province, resource ceilings were established to limit branch budget submissions for OM&A, capital and minor fixed asset expenditures. The ceilings were accompanied by results floors in which key program results of the approved plan were to be met or exceeded.

6.1.3 Hydro testified that the current planning environment is dominated by concern over rates and controlling program costs while improving program results. Branches were directed to ensure the consistency of plans with the DSP update and advised of possible further reductions in budget ceilings. The DSP update, however, resulted in two further changes in the 1992 process. Firstly, a new business plan was not issued in January 1992, with the existing plan viewed as a good base for short-term planning. Secondly, branch business plans normally issued in the spring will be delayed to the fall, in 1992, for an integrated review of both the branch planning and budgeting process.

6.1.4 The evidence on the development of OM&A program costs for 1992 and 1993 is shown in Table 6-1. The budget based on the 1990 plan was presented, as adjusted, in H.R. 20. Branch submissions and management adjustments from the 1991 Business Plan to the H.R. 21 final update are shown.

6.1.5 Hydro testified that the branch submissions for the 1991 Business Plan in May 1991 generally met resource ceilings and result floors for 1992 and 1993 OM&A program costs. The Nuclear Operations Branch indicated it required some $60 million more in 1992 and 1993 to meet the result floors. The Senior Management Committee ("SMC") held the resource ceilings pending further review in the later budget submissions, increasing only the energy management ceilings significantly in recognition of the higher target for the year 2000. Branches were directed to meet their ceilings, and to identify activities having the least effect on key results in order to indicate the consequences of a further 5 percent reduction in 1992 and 1993 OM&A costs.

6.1.6 Coincident with the conversion of costs to 1992 dollars, the Retail OM&A costs in regions were reclassified as capital, reducing 1992 and 1993 OM&A costs by $15 million and $14 million respectively.

TABLE 6-1: DEVELOPMENT OF 1992 AND 1993 OM&A PROGRAM COSTS

			OM&A Program Costs ($ Millions)	
Development Stage	**Date**	**$ Year**	**1992**	**1993**
H.R. 20 Update	Jun/91	1991	2,142	2,223
Branch Plans	May/91	1991	+14	+15
1991 Business Plan	May/91	1991	2,156	2,239
Management Adjustment	Sep/91	1991	-1	+11
1992-93 Budget/1991 Plan Ceilings	Sep/91	1991	2,155	2,249
Conversion 91$ to 92$	Sep/91	--	+110	+114
Retail OM&A to Capital	Sep/91	--	-15	-14
1992-93 Budget/1991 Plan Ceilings	Sep/91	1992	2,250	2,349
Branch Submissions	Nov/91	1992	+76	+103
Submitted Budget	Nov/91	1992	2,326	2,451
Management Adjustment	Feb/92	1992	-127	-145
1992-93 Approved Budget	Feb/92	1992	2,200	2,307
Adjustment	Mar/92	1992	-10	+1
H.R. 21 Rate Submission	Mar/92	1992	2,190	2,308
Update Adjustments	Jun/92	1992	-30	-13
H.R. 21 Final Update	Jun/92	1992	2,160	2,295
Conversion 92$ to 93$	Jun/92	--	--	+47
H.R. 21 Final Update	Jun/92	1993	--	2,342

Sources: Exhibit 6.1.2
Exhibit 1.1.4 - Final Update

6.1.7 Branch submissions in November 1991 were significantly higher for Nuclear Operations due to required maintenance to meet result floors and increased heavy water costs. Thermal Operations raised costs reflecting higher energy production. Branch submissions were $76 million higher than plan ceilings for 1992 and $103 million higher for 1993.

6.1.8 Hydro attributed major reductions by the SMC in approving the 1992 budget and the 1993 forecast to concern about the impact of economic conditions on customers and Hydro's deteriorating financial outlook. Reductions in the 1992 budget were $127 million with reductions in virtually all areas. Nuclear and Thermal Operations, the Regions and Energy Management took the major reductions. The budgets for the same branches were reduced in the 1993 forecast by a total of $145 million. The 1993 cuts were identified as $93 million in program reductions and $52 million for costing changes in payroll burden, wage assumptions and the capitalization of computer systems.

6.1.9 The OM&A program costs for 1992 were reduced by a further $40 million between the approved budget and the H.R. 21 Final Update. The decrease was due to lower payroll burden and non-labour escalation and to reduced discretionary spending and deferral of lower priority programs.

6.1.10 In Hydro's original submission the real growth in OM&A program costs for 1993 over 1992 was $118 million. More than half of that increase was attributed to the projected placing in service of new units at Darlington. Lower cost escalation reduced the 1993 OM&A expenses by a further $13 million in the final update. Hydro testified that the update adjustments were based primarily on the 1992 situation, and that reviews of 1993 and beyond will occur in the business planning and budgeting process in the fall of 1992.

Positions of the Parties

6.1.11 While all intervenors expressed concern about the level of OM&A expenses and many recommended reductions in the 1993 proposal, few comments were made regarding the business planning and budgeting process itself.

6.1.12 Board Staff interpreted the evidence as indicating that senior management does not conduct a formal review of existing programs. It recommended that both existing and new programs be evaluated by senior management in setting budgets.

6.1.13 Staff recommended that operating branches should strive to increase result floors within resource ceilings [illegible] times of operational difficulty. At other times those branches, and support branches at all times, should try to achieve result floors at costs below the resource ceilings. It submitted that Hydro uses resource ceilings as budget guidelines and not as a cost control measure, and recommended that ceilings be the maximum expenditure to achieve the result floors.

6.1.14 Board Staff submitted that Hydro should make real cuts to programs rather than shifting OM&A costs into the future by deferring low priority work that will ultimately have to be done. It recommended that Hydro not divert maintenance funds from fossil, hydraulic and transmission programs.

6.1.15 Board Staff also recommended that Hydro continue to monitor the performance of all forms of generation to determine the most efficient allocation of resources. Continued investment in the nuclear program should be made only if it is the most economic alternative based on achieved performance rather than forecast performance.

6.1.16 The MEA expressed concern about the apparent Hydro attitude that budgetary savings cannot be achieved without sacrificing necessary work. It noted the earlier linkage between periods of cost restraint and the deterioration of generation performance. The MEA called for a fundamental change in cost control with adjustments to staff levels and real and permanent reductions in OM&A allocations without decreases in reliability of service.

6.1.17 In addition to reductions in OM&A expenditures in specific areas, discussed elsewhere in this report, Board Staff recommended a 1 percent or $23 million reduction in the 1993 OM&A budget for productivity improvement. Both the MEA and IPPSO recommended 5 percent or $115 million reductions. As part of their recommendation to freeze rates, AMPCO recommended a 30 percent or $692 million reduction in the 1993 OM&A budget.

6.1.18 In response to the Board Staff recommendation that both existing and new programs be evaluated by senior management in the budgeting process, Hydro stated that both types of programs now receive a thorough review and prioritization. It pointed out that the use of existing expenditure levels as a starting point or base for reviews does not mean that existing programs are not subject to scrutiny.

6.1.19 Hydro agreed with Board Staff's recommended use of resource ceilings and result floors in controlling costs, with the exception that resource ceilings cannot be an inflexible maximum expenditure limit. Hydro argued that there must be some flexibility to deal with unforeseen events during the year.

6.1.20 In response to Board Staff's recommendations regarding its concern about the diversion of maintenance funds from fossil, hydraulic and transmission programs, Hydro stated resource allocation is a difficult balancing act. Final allocations are not made until completion of the business plan review of all corporate priority areas.

6.1.21 Hydro rejected Board Staff's recommendation that investment decisions for nuclear programs be based on historical, rather than projected performance. It acknowledged that recent forecasts have proven to be optimistic, but stated that a combination of actual experience and anticipated performance will continue to be used in developing forecasts.

6.1.22 Hydro disagreed with the MEA's call for further direct reductions in OM&A expenditures without sacrificing necessary work and challenged the recommended general reductions by other intervenors.

Board Findings

6.1.23 The Board is of the view that Hydro has made some progress in its refinements to the business planning and budgeting process in the past year. Experience with the resource ceilings and results floors has been generally positive, although there remains some evidence that the refined process is not as yet operating with full effectiveness as a cost control mechanism. The two deviations from the normal process to accommodate the impact of the DSP update are considered to be appropriate in the present planning year.

6.1.24 It is clear that Hydro is placing more emphasis, at all levels, on cost control, with significant reductions in OM&A and capital expenditures realized in 1992. It is also apparent that the review and prioritization of existing and new programs has been increased. Priorities within branch programs are, appropriately in the Board's view, the responsibility of the branch and its vice-president. The Corporate Programming Division reviews each branch plan and reports its findings and recommendations to the SMC. The evidence indicates that the level of inter-branch prioritization by the SMC has increased.

6.1.25 The Board recognizes that any process of prioritization can result in the deferral of some expenditures to a later date. The process of trade-offs also entails the acceptance of some risks which must be identified and assessed as decisions are made. The Board views the prudent management of trade-offs and risks as inevitable and essential in any well-run enterprise, and encourages Hydro to continue its progress in those areas with, if anything, increased vigour.

6.1.26 While the Board notes some progress in the modified business planning and budgeting process, it considers that the many concerns expressed by parties to the hearing, and the comments received from individuals and organizations in letters of concern to the Board, are a clear indication that Hydro has a long way to go in achieving results from this process.

6.1.27 The Board is satisfied on the basis of the evidence that Hydro has modified its procedures in the areas in which Board Staff has made recommendations. However, in regard to program cuts, the Board shares the concerns of Board Staff and the MEA that the savings from the 1992 planning process result from deferral of work rather than from real and lasting cuts in program costs. The Board also agrees with the MEA that the savings should not be made at the expense of program results and the quality of service.

6.1.28 There is no question that Hydro is experiencing great pressure to control costs and limit rate increases during the current weak economic climate. Hydro is responding to this pressure by making significant changes in its budgeting process and the Board strongly urges Hydro to entrench these changes and ensure that the effect of these changes will continue regardless of the economic conditions. However, in the Board's view, there still remains the question of the adequacy of the savings generated by these changes and this matter is discussed by the Board later in this chapter.

6.1.29 The Board considers the following recommendation to be the most important of this Report and urges Hydro's Board of Directors to effect substantial permanent cuts in Hydro's OM&A expenses.

Recommendation 6.1:

The Board recommends that Hydro strive to achieve real reductions in OM&A program costs which result, not only from temporary

deferrals, but rather from cuts that will endure regardless of the prevailing economic conditions.

6.2 OM&A PROGRAM COSTS AND CAPITAL EXPENDITURES

Introduction

6.2.1 OM&A costs at $2.31 billion for 1993 represent 26 percent of Hydro's revenue requirement. Total OM&A expenses are projected to increase by $199 million over 1992 or 9.4 percent. The 1993 capital program is projected to be $3.5 billion, down 19 percent from 1992.

6.2.2 Evidence on the OM&A program costs and total costs for 1991, 1992 and 1993 are shown in Table 6-2. Significant increases in program costs occur in Energy Management, power delivery and nuclear generating. Fossil and hydraulic generation costs, as well as those for corporate management and services, are essentially unchanged in real terms.

6.2.3 Issues related to 1993 OM&A expenses were raised in the following areas:

- Continuous Improvement Program
- Staff Levels
- Compensation Levels and Differentials
- Board Adjustment to OM&A Expenses

CONTINUOUS IMPROVEMENT PROGRAM

6.2.4 A new internally driven Continuous Improvement Program ("CIP") was introduced by Hydro in H.R. 20. The CIP is described by Hydro as part of a corporate strategy to improve corporate effectiveness and efficiency. CIP initiatives are developed by branches to meet the business needs of the branch with the involvement of employees and, where appropriate, the employee bargaining units. Goals of the CIP are reflected in branch budgets and work programs. Monitoring of the effectiveness of the CIP will be done within the budgetary framework.

6.2.5 The CIP approach was described as being bottom up rather than top down. It is based on teamwork and cooperation between employees and management requiring an increased spirit of mutual trust. Hydro stated that the role of senior management was described as providing support and encouragement for the bottom-up approach.

TABLE 6-2: OM&A COSTS BY CORPORATE PROGRAM
($ MILLIONS)

Particulars	**1991 ($92)**	**1992 ($92)**	**1993 ($92)**	**1993 ($93)**
Generation				
Nuclear	843	899	976	995
Fossil	266	282	284	291
Hydraulic	103	103	106	109
Other	82	76	76	76
Total Generation	1,293	1,360	1,442	1,471
Delivery	436	437	452	462
Energy Management	110	117	136	139
Corporate Management Services	304	286	286	291
Other	(12)	(10)	(8)	(8)
Total Program Costs	2,132	2,190	2,308	2,355
Other Costs and Adjustments	(22)	(54)	(39)	(36)
Total OM&A Costs - Submission	2,110	2,136	2,269	2,319
Adjustment per Final Update	---	(30)	(14)	(13)
Updated Total OM&A Costs	2,110	2,106	2,255	2,305

Sources: Exhibit 1.1.0 - Table 6.2
Exhibit 1.1.4 - Final Update

6.2.6 Hydro's evidence reviewed the progress made with CIP initiatives in those branches where the process is relatively advanced. Examples of successful initiatives and savings attributed to the programs were described, notably for the Design and Construction, Nuclear Operations, Procurement and Power System Planning and Information Management and Workplace Services Branches. Progress and plans for the CIP in other branches with less advanced status were also reviewed.

Positions of the Parties

6.2.7 Board Staff noted some problems in the CIP for the Nuclear Operations Branch, with confusion regarding prioritization and some slippage in the goals of the program. Board Staff called for much tighter control of the CIP process by Hydro's senior management. It recommended senior management should establish a common framework for the development of CIP, set tangible goals and productivity improvements to monitor success, and monitor and control costs to evaluate the effectiveness of the programs.

6.2.8 AMPCO expressed concern about the lack of direct central control of the CIP, and need for a specific monitoring mechanism to determine improvements resulting from CIP.

6.2.9 The MEA argued that Hydro must recognize that the original intent and ultimate objective of the CIP is to achieve improvement in quality and service. That program in the MEA's view is not designed primarily to achieve the productivity improvements or cost savings needed by Hydro.

6.2.10 Hydro acknowledged that it is time for greater senior management direction to improve the focus of CIP efforts on key corporate priorities. It stated that the centralized structured mechanisms proposed by Board Staff and AMPCO are inconsistent with the philosophy of CIP. They would add bureaucracy and costs but would contribute no significant value.

6.2.11 Hydro disagreed with the MEA's contention that increased productivity is not a primary goal of the CIP process. Productivity will be improved, in Hydro's view, through improved quality and work processes, with reduced waste.

Board Findings

6.2.12 The Board recognizes that Hydro is firmly committed to the new CIP process, which is relatively well advanced in several branches. Approaches of this kind have been adopted by many companies in Canada and elsewhere. The Board has some concerns that the conditions which lead to successful programs, such as the impact of market forces on productivity, costs and quality, shareholder accountability and labour relations, may not apply to the same extent to Hydro. The Board is of the view that Hydro faces significant challenges in the application of this initiative to meet its pressing needs, and will follow developments with great interest.

6.2.13 The Board agrees with Hydro that it is not the time for senior management to employ a heavy hand in the CIP process. It seems appropriate for senior management to support and encourage the process with focus on the key corporate priorities.

6.2.14 The Board is more optimistic than is the MEA that the CIP process will contribute significantly to improved productivity and reduced costs. The Board urges Hydro and its employees and bargaining units to agree on objectives for CIP initiatives to improve productivity and strive to meet these goals as quickly as possible. The Board further expects Hydro to provide evidence in H.R. 22 on its progress in this regard.

STAFF LEVELS

6.2.15 Hydro's regular staff levels since 1986 are shown in Table 6-3. Hydro's current estimate of its regular staff requirement for 1992 stands at 29,495, an increase of 226 above the budget for 1991, and 725 above the 1991 actual. Hydro plans to add 250 more employees in 1993, bringing the total to 29,745 by the end of the year.

TABLE 6-3: REGULAR STAFF LEVELS

	1986	1987	1988	1989	1990	1991	1992	1993
Budget	23,200	24,413	25,032	25,909	27,739	29,269	29,495	29,745
Actual	23,716	24,306	24,824	25,543	27,834	28,770		
Variance	516	(107)	(208)	(366)	95	(499)		

Sources: Exhibits 6.6.22 and 6.1.10 - Appendix I.

6.2.16 As explained by Hydro, additional staff is required to support higher program levels in the operating branches and within the energy management program. The increased activity is reflected in three main areas:

- The continuing efforts to improve plant capability so that existing facilities can be fully utilized safely and efficiently.
- The completion and operation of new facilities.
- The further development and delivery of demand management initiatives to minimize future generation costs.

6.2.17 As shown in Table 6-4 staff increases in operating branches have been partially offset by lower staff requirements for design and construction activities. Over 80 percent of the 1992 staff increases are in the Energy Management & Corporate Relations and Nuclear Operations Branches, and 86 percent of the 1993 additions are in the Regions and Nuclear Operations Branches. Almost half of the 1993 staff increase is due to the conversion of contract and temporary staff jobs to regular staff positions.

TABLE 6-4: STAFF CHANGES BY BRANCH

Branch	1991 Budget	1992 Change	1992 Budget	1993 Change	1993 Budget
Nuclear	8,572	414	8,986	114	9,100
Thermal	2,643	72	2,715	16	2,731
Regions	8,169	66	8,235	190	8,425
Design & Construction	4,715	(498)	4,217	(104)	4,113
Energy Management & Corporate Relations	504	205	709	26	735
Other Branches	4,666	(33)	4,633	8	4,641
Total Regular Staff	**29,269**	**226**	**29,495**	**250**	**29,745**

Source: Exhibit 6.1.10 - Table 1.0

6.2.18 In 1987 Hydro began a program with the assistance of the consultants Canada Consulting Cresap ("Cresap") to reduce the numbers of staff and layers of management. At the outset, it was estimated that staff levels would be reduced by 2,500 positions. The final revision to the staff reduction target was 1,925 positions in H.R. 20.

6.2.19 Hydro indicated that the Cresap program has been concluded. It reported that all staff reductions attributed to the program have been incorporated in the budget, except for the Nuclear Operations Branch, and that no further tracking of these position reductions will be done.

6.2.20 Hydro considers the CIP process to be incompatible with the essentially top-down Cresap process. Under CIP, individual branches are responsible for staffing levels, based on resource ceilings and results floors. According to Hydro, staff level impacts from the CIP cannot be measured quantitatively like those of the Cresap program, but can be measured qualitatively at the unit level.

6.2.21 Hydro testified that staff requirements and productivity improvements will be evaluated and controlled at the branch level, using monetary budget ceilings which are considered to be more effective than staffing constraints because they include all resource costs. As a result of the current budgeting process, a number of Hydro's branches are operating with hiring restraints, especially the support branches and any branches where downsizing is occurring. According to its Chair, Hydro was too large and complex, and layers of management should be removed to permit greater delegation of responsibility and more accountability throughout the organization. The recent re-organization of Hydro's senior executive group was the first step toward this goal.

6.2.22 As testified by Hydro's Chair, rising staff levels are not an immediate concern of Hydro's senior management. According to him, managing staff levels to meet demand is an ongoing process at Hydro, but because Hydro provides an essential service, it does not have leeway for massive downsizing without significantly impacting service reliability. Reductions of regular staff are not being considered at this time, but cuts would be used as a last resort if the demand for particular skills no longer exists.

Positions of the Parties

6.2.23 Board Staff expressed concern that senior management's lack of control over staffing at the branch level will result in unnecessary staff additions and layering which will prove to be irreversible in the future. They submitted that Hydro's staff levels have grown inexorably and will continue to grow with plans to add a total of almost 1,000 positions in 1992 and 1993. To the extent that Hydro considers the cost of regular employees to be fixed, adding permanent staff limits Hydro's ability to control costs. Hydro's Board and senior management should maintain or even reduce staff levels.

6.2.24 Board Staff submitted that the proposed addition of 474 positions by the end of 1993 over the H.R. 20 forecast is not justified and that this is illustrated by the fact that at the end of May, Hydro's regular staff was 439 under budget. Staff argued that a reduction of 1992 and 1993 staff levels from those currently forecast is likely and will result in the 1993 year growth being at least 25 percent lower than Hydro's current forecast. Accordingly, Board Staff recommended a cut of 120 regular staff positions for 1993, which would reduce 1993 OM&A expenses by $8 million.

6.2.25 To control the staff levels, Board Staff did not recommend a return to the Cresap process of monitoring staff savings. Previous efforts by Hydro to monitor the staff level savings showed greater slippage from the Cresap targets at each successive hearing. Board Staff concurred with Hydro's executive witnesses that a management audit at this time would be too expensive, counter-productive and contradictory to the current CIP.

6.2.26 Board Staff recommended that Hydro continue to rely on its CIP for productivity improvements, provided that senior management monitors and adjusts staff levels to meet Hydro's program requirements. In H.R. 22, Hydro should file a report on its efforts to optimize staff levels and ensure that existing staff is effectively employed. It argued that the five year staff level forecasts should also be filed in H.R. 22, as well as a report on Hydro's efforts to improve its staff level forecasts.

6.2.27 The MEA stated that Hydro's expansion of regular staff is a major burden on costs, due to the Corporation's continuity of employment policy. The MEA cited the low attrition and termination rates and Hydro's reluctance to accept personnel changes which might result in lay-offs of regular staff. It argued that Hydro must adjust its staff levels and make real and permanent cuts in its OM&A allocations if it wants to control costs. The MEA submitted that the evidence does not show that real cuts to OM&A will adversely impact Hydro's quality of service.

6.2.28 IPPSO recommended that Hydro should reduce the Nuclear Operations staffing levels as part of its recommendation that Hydro's 1993 OM&A budget be reduced by 5 percent.

6.2.29 The Windsor Utilities Commission recommended that Hydro freeze all new hiring and external service contracts in 1993, with the exception of operating staff required to provide a reliable and secure supply of electricity. It stated further that long-term and non-essential staff projects should be deferred until the economy improves.

6.2.30 Hydro contended that staff levels are evaluated on an ongoing basis as part of the budget review process. It stated that staff changes are a direct result of changes in the requirements in work programs. Hydro rejected the calls for regular staff reductions from the forecast levels, or for hiring freezes.

6.2.31 Hydro stated that Board Staff had taken out of context, testimony that Hydro was not concerned about increasing staff levels. It pointed out that the statement referred only to staff levels associated with specific projects that are considered essential. It considered Board Staff's recommendations regarding further monitoring of staff levels as unnecessary given the annual reviews and accounting for changes in the hearings before this Board. Hydro stated its intention to forecast five year staff levels in conjunction with the business planning process.

6.2.32 While rejecting the reductions in staff increases recommended for 1992 and 1993 by Board Staff, Hydro disputed the impact on OM&A costs imputed by Board Staff for the staff reductions. Reduced staff working on capital programs would, Hydro pointed out, have no impact on OM&A costs.

6.2.33 Hydro denied the MEA contention that Hydro has had a generous continuity of employment policy. It stated it would take appropriate action in ways such as attrition, retraining and redeployment to other work should staff reductions in particular areas occur. Hydro rejected reductions in permanent staff as an end in itself.

Board Findings

6.2.34 The Board continues to be very concerned about the growth in staff levels and the major impact this has on costs and rates. The recent modifications in the Business Planning and Budgeting process, as discussed in the first part of this chapter, leave the Board unconvinced that the changes are not simply damage control until times get better. The Board agrees with the approach taken by intervenors that intense pressure must be maintained on Hydro to reduce the major component of its OM&A costs, namely the number of staff.

6.2.35 The success of the CIP in controlling staff levels will, in the opinion of the Board, require a major effort to achieve the required results. Within the context of teamwork and trust at all levels in the Corporation, recognition must develop that a leaner, more efficient organization is both essential and of real benefit to all, in view of the irreversible changes that are occurring in Hydro's marketplace and its operating environment. If improvements do not come from within, they will inevitably be forced upon Hydro by economic and political pressure from outside. The Board urges Hydro to take the initiatives required to shape its own future.

6.2.36 The Board repeats the concern expressed in its Report in H.R. 20 that the ongoing control of staff levels is essential to control costs, particularly in light of Hydro's evidence that it is unable to significantly reduce the employee compensation differentials in the short-term. In that regard, the Board takes note of Hydro's testimony that it does not have a continuity of employment policy. However, the Board also notes that the evidence indicated that Hydro acts as though it does.

6.2.37 The Board is of the opinion that Hydro's implementation of the CIP process must be subject to some form of scrutiny and for Hydro to maintain that outside auditing would be counter-productive is not acceptable. The Board urges Hydro to incorporate into the CIP process internal auditing within the CIP teams with appropriate agreed upon incentives to reduce the number of staff and to eliminate unnecessary reporting layers. As well, the Board will continue to review the CIP results and if necessary, it will recommend an external audit at a future hearing.

6.2.38 The Board agrees with Hydro that additional staff is required for programs critical to the achievement of key results. The Board does not agree, however, that such specific staff additions must result in increases in overall staff levels. It expects that such additions would be offset by reductions in less urgent programs.

6.2.39 Further, the Board expects that Hydro will report in H.R. 22 on the efforts of the Human Resources Branch to improve the forecasting and planning staff levels.

6.2.40 The Board makes additional reference to staffing levels in its discussion of overall OM&A expenses later in this chapter.

COMPENSATION LEVELS AND DIFFERENTIALS

6.2.41 For purposes of assessing compensation, Hydro's regular staff can be divided into three main groups. The largest group, 67 percent of the total, is composed of 19,000 clerical, technical and trades ("T&C") staff who are represented by CUPE Local 1000 ("CUPE"). The 8,500 management and professional staff ("M&P") form the other bargaining unit, represented by the Society of Ontario Hydro Professional and Administrative Employees ("the Society"). The remaining 700 employees, classified as the Executive Salary Roll ("ESR"), are not represented by a bargaining unit.

6.2.42 From 1987 to 1991, Hydro's total corporate labour cost for regular and non-regular employees increased from $1.59 billion to $2.37 billion, an annual compounded rate of 10.5 percent. The total labour cost increase fell to 3 percent for 1992 and is expected to be 1.3 percent in 1993. The average total compensation cost per regular employee which includes all benefits rose from $47,492 in 1987 to $67,580 in 1991, an annual increase of 9.2 percent.

6.2.43 As shown in Table 6-5, Hydro's wage and benefits continue to exceed the compensation paid by external reference communities composed of both private and public organizations. While some improvement has occurred in the ESR and M&P differentials, the compensation premium has not been reduced for the majority of Hydro's regular work force, and the Corporation testified it does not have a specific schedule to achieve parity with the reference communities.

6.2.44 Hydro stated that its long-term objective is to narrow the differentials. In the short-term, the Corporation intends to negotiate settlements similar to those for compensation included in the most recent collective agreements. The differentials will narrow slightly in 1992 and 1993 but it is unlikely that they will change significantly in the short-term, except possibly in 1993 for M&P employees.

6.2.45 The wage differential for Hydro's CUPE employees increased in 1991, offsetting a reduction in benefits differential for this group, and resulting in an increase in the total compensation differential. This increase is attributed to improvements in Hydro's pay equity, pension and long-term disability provisions.

6.2.46 The CUPE collective agreement provides for a 1 percent increase in 1992 and a 2 percent increase in 1993 with a one-to-one cost of living adjustment ("COLA") for the portion of the Ontario CPI which exceeds 2 percent. If a COLA supplement is necessary, the payment will be made as a weekly lump sum, which will not increase the base salary until the end of the contract period. The 1992 CUPE increase is below both the public and private sector average wage settlements, of 2.7 and 3.3 percent respectively, which occurred during the negotiations between Hydro and CUPE. A salary increase of 1.8 percent is included in the 1993 rate submission for this employee group as compared to the current wage settlements in the reference community of between 2 and 5 percent, with gains in the public sector just less than 3 percent.

TABLE 6-5: COMPENSATION DIFFERENTIALS BETWEEN HYDRO AND REFERENCE COMMUNITIES

	Differentials (Percent)					
Particulars	**CUPE**		**M & P**		**ESR**	
Year	**1990**	**1991**	**1990**	**1991**	**1990**	**1991**
Wages	4.6	5.7	12.2	9.8	6.9	9.2
Benefits	32.1	24.9	23.4	25.2	19.1	5.7
Total Compensation	8.4	8.7	14.1	12.2	9.0	8.4

Sources: Exhibit 6.1.11 - H.R. 21
Exhibit 6.1.13 - H.R. 20 (Hay Studies)

6.2.47 The 1992 CUPE contract includes a purchased services agreement defining contracting out with, according to Hydro, improved terms. The Corporation also agreed to improve other non-wage benefits such as hours of work, job security, pension and health insurance. The CUPE contract also includes an understanding which provides for the safe shutdown of all of Hydro's nuclear facilities by CUPE employees in the event of a strike. As part of this understanding, Hydro agreed not to attempt to run the facilities using management staff.

6.2.48 Total compensation for M&P employees declined from 14.1 percent above the reference community to 12.2 percent above. Negotiations are currently under way with the Society, which has agreed to no increase for 1993 unless, to maintain internal parity, the CUPE increase exceeds 4.5 percent. The 1993 rate submission does not provide for a salary increase for M&P employees.

6.2.49 The total compensation paid to ESR employees in 1991 was 8.4 percent above the community average, down from 9 percent in 1990. The average salary increase for this group was 2.1 percent in 1991, which was allocated on the basis of individual performance. Performance increases ranged from zero to 7 percent. The 1993 rate submission includes a 1 percent salary increase for Hydro's ESR employees.

Positions of the Parties

6.2.50 Board Staff noted that little progress has been made in narrowing the compensation differentials and that Hydro has no timetable for doing so. It submitted that reducing the differentials is not in conflict with the CIP process, but can result from working together with employees to reduce labour expenses. Board Staff recommends that all parties, Hydro's Board, senior management and employees' bargaining units as well as the government, must strive to reduce the compensation differentials.

6.2.51 Board Staff noted that Hydro's pension plan is among the very best among private and public plans and is a major contributor to the Hydro differential in benefits. Hydro is prohibited by the Power Corporation Act from using any pension surplus to offset annual contributions on account of current service costs. This provision is inconsistent with those of the Pension Benefits Act. Board Staff recommended that the Board urge the government to introduce an amendment to the PCA to conform with the Pension Benefits Act with regard to the use of any surplus in Hydro's pension plan.

6.2.52 The MEA contended that Hydro continues to pay its staff significantly more than the reference communities and that given the enhanced bargaining power of the Society, there is no evidence that the total compensation differentials will begin to decline. Although the CUPE wage increases have been held to 1 percent in 1992 and 2 percent in 1993, the latter increase is subject to a COLA supplement and the Corporation has agreed to improve non-wage benefits which will put further upward pressure on labour costs.

6.2.53 The MEA expressed concerns about the erosion of Hydro's bargaining power with the Society in the agreement reached in November, 1991. It noted that Hydro reduced the number of positions that should be excluded from the bargaining unit from 3,000 to 800 and that both supervisory and non-supervisory personnel are now included in the same bargaining unit. It also questioned the inclusion of the financial soundness of Hydro and its ability to pay as one of the criteria for mediators and arbitrators for the determination of monetary awards. The MEA contended that Hydro's ability to pay is limited only by its willingness to increase rates.

6.2.54 IPPSO submitted that there is no evidence to demonstrate that Hydro's employees are more productive than employees in external reference communities, and therefore there is no justification for Hydro to continue to pay its employees more than the market. Accordingly, IPPSO recommended that Hydro use a more aggressive program to reduce the compensation gap and submit in H.R. 22 a plan to improve productivity and/or reduce the compensation gap so that staffing costs, relative to employee productivity, are brought in line with the reference community in the immediate future.

6.2.55 Energy Probe stated the opinion that Hydro's staff performance is uncompetitive when compared to other utilities. On average the utility reference group to which Hydro compares itself has 33 percent more capacity per payroll dollar and produces almost twice as much revenue per payroll dollar as Hydro does. In the view of Energy Probe, the poor productivity of Hydro's staff implies that the Corporation is not getting value for money from its personnel, thus emphasizing Energy Probe's argument that incentive compensation should be introduced for all of Hydro's employees.

6.2.56 Energy Probe also stated that the passage of Bill 118 changes the relationship of Hydro to the provincial government. It argued that an appropriate comparison reference community for compensation levels would be public servants performing comparable tasks.

6.2.57 Hydro reiterated its commitment to reducing the compensation differentials, and cited the recent wage settlements as an indication of progress in that regard. It stated that Hydro can influence negotiations, but does not have full control of the result. Hydro disagrees that a meaningful timetable for the elimination of the differentials can be provided at this time.

6.2.58 Hydro stated that it and employee representatives are working together to address compensation and corporate effectiveness matters which, together with CIP initiatives, should lead to gains in productivity. It considers that the recent agreements are joint problem solving initiatives indicating a good start.

6.2.59 Hydro considers the inclusion of financial soundness and ability to pay in settling monetary issues with the Society will enable joint consideration of all relevant factors in negotiations.

6.2.60 In agreeing with Energy Probe that public sector compensation should be included in reference comparison communities, Hydro rejects reliance on the public sector alone. Hydro must compete with all organizations for skilled technical, professional and managerial staff.

Board Findings

6.2.61 The Board has the same concerns about staff compensation as it has expressed about staff levels. It notes recent signs of progress, but is not convinced that real and lasting improvements will survive the present economic conditions. In fact the Board notes that the average total compensation costs per regular employee rose from $47,492 in 1987 to $67,580 in 1991. In light of this record the Board has little confidence in management's ability to reduce the compensation differentials.

6.2.62 Compensation levels are a significant contributor to high costs and have gained increasing symbolic, as well as real importance. In the context of the CIP process, the Board is concerned about the opposing goals of those dealing with organizational and operational matters in the CIP and those responsible for negotiating collective agreements on behalf of employees. It will be a major challenge for Hydro to foster the attitudinal changes that will be required to produce the desired results. The Board urges Hydro to make the reduction of compensation level differentials one of its top priorities.

6.2.63 It is not clear to the Board that the reference to Hydro's ability to pay, in the recent agreement with the Society, applies to Hydro's financial situation, rather than to its ability to pass through rate increases to customers as suggested by the MEA. The Board expects this matter to be clarified in H.R. 22.

6.2.64 The recommendations of Energy Probe that a public sector reference community be used for compensation comparisons by Hydro is considered by the Board to be inappropriate. The Board agrees with Hydro that both private and public communities be used for comparison. The same finding applies to Energy Probe's recommendation regarding the use of public sector experience only in matters of pay for performance incentives.

6.2.65 The Board agrees with Board Staff that the pension provisions should be altered to conform with the provisions of the Pension Benefits Act. The Board will again repeat its recommendation to the Minister to that effect.

Recommendation 6.2:

The Board recommends that Hydro make the reduction of the total compensation differentials with external reference communities a top priority.

Recommendation 6.3:

The Board recommends that the Minister introduce changes to Section 24 of the Power Corporation Act to ensure its consistency with the Pension Benefits Act, in particular with regard to the constraints on Hydro's use of any surplus in its pension fund.

BOARD ADJUSTMENT TO OM&A EXPENSES

6.2.66 Hydro testified that it has not altered its 1993 OM&A budget except insofar as it has been affected by adjustments to its 1992 budget and that the 1993 budget for rate setting purposes will be finalized in the fall. The Board is of the view that the pressure to limit rate increases for 1993 will not abate during this process thus emphasizing the continuing need to control costs.

6.2.67 The Board has commented throughout its discussion of the 1993 OM&A expense budget that Hydro must reduce these expenses further, without any undue deterioration in program results. The need for prudent management in that regard is particularly urgent in view of the ongoing difficult economic times. In the Board's opinion, Hydro's cost cutting has been too limited and too slow in relation to the economic downturn and it must exercise very stringent cost control for 1993.

6.2.68 In particular, greater exercise of cost control by senior management must be made in prioritizing programs among the branches. The Board expects further significant reductions in program costs for 1993. Accordingly, it will recommend a reduction of 5 percent or $115 million in Hydro's 1993 OM&A expense budget.

Recommendation 6.4:

The Board recommends that Hydro reduce its OM&A expense budget for 1993 by 5 percent. The effect of this recommendation is to reduce the 1993 revenue requirement by $115 million.

6.2.69 In making this recommendation, the Board notes that Hydro has again characterized recommendations for general across-the-board OM&A expense reductions such as this, as unhelpful. It claims that the factors underlying such recommendations have already been taken into account in proposed expense levels. However, the Board notes that Hydro's Chair called for, and the executive implemented such an across-the-board reduction in the budgeting process for 1992. Therefore, the Board leaves it to Hydro to determine the particular programs in which the recommended reduction will be implemented.

6.2.70 In view of the effect of staff levels and compensation on Hydro's expense budgets, the Board considered recommending a hiring freeze as part of the 5 percent reduction. However, the Board concluded that it was more appropriate to leave to Hydro's management the determination of how to effect this recommendation which may well be a combination of staff and program reductions.

CAPITAL PROGRAM EXPENDITURES

6.2.71 Capital program expenditures for 1991, 1992 and 1993 are shown in Table 6-6. The 1993 capital program expenditures in the Final Update were forecast to be $3.52 billion, down 19 percent from the projection for 1992.

6.2.72 Hydro testified that, in the fall of 1991, the capital budgets were reduced by $220 million for 1992 and $496 million for 1993. In updates in May and June 1992, the 1992 and 1993 capital budgets were reduced by further $249 and $73 millions respectively. These reductions were attributed to economic conditions and changes in project scheduling.

6.2.73 The capital budget reduction in 1993 compared to 1992 is mainly explained by the absence of major capital expenditures for Darlington and large transmission lines as well as the completion of fossil programs. Hydraulic generation costs increased in Niagara and Mattagami River projects, while intensified energy management efforts increased capitalized program and incentives expenditures.

6.2.74 Issues regarding the capital program process and the production of heavy water are dealt with in this chapter. Capital program matters related to Darlington and the rehabilitation of Bruce A are discussed elsewhere in this chapter.

TABLE 6-6: CAPITAL PROGRAM EXPENDITURES
($ MILLIONS)

Particulars	Actual 1991	1992	1993
Generation			
Nuclear	1,584	1,644	771
Fossil	531	860	583
Hydraulic	217	156	390
Heavy Water	278	297	297
Other	6	6	15
Transmission	651	856	663
Retail	286	347	375
Energy Management	88	153	238
Management and Services	61	88	87
Minor Fixed Assets	193	181	173
Total Capital Program Expenditures	**3,895**	**4,589**	**3,592**
Adjustment per Final Update	—	(249)	(73)
Updated Total Capital Program Expenditures	**3,895**	**4,340**	**3,519**

Sources: Main Submission
Exhibit 1.1.4 - Final Update

Positions of the Parties

6.2.75 Board Staff expressed concern that Hydro is controlling its capital budgets by deferring projects and shifting expenditures into the future. It submitted that Hydro is not effectively cutting budgets, and should closely examine the ranking and prioritization of all capital expenditures.

6.2.76 Board Staff also criticized Hydro's forecasting of capital budgets, particularly with regard to the forecasts for two years ahead. It recommended that Hydro should improve its capital budgets forecasting.

6.2.77 AMPCO noted that Hydro produces heavy water in quantities well beyond its appropriate needs and plans to continue doing so until at least 1996. In its view, that will lead to the capitalization of exorbitant interest charges and increase total costs.

6.2.78 AMPCO recommended that Hydro operate heavy water production at 50 percent capacity until the longer-term requirements for the product become clearer, and to produce a full cost/benefit analysis and report on the feasibility of mothballing the heavy water plant.

6.2.79 The MEA also recommended that Hydro review the options for heavy water production.

6.2.80 Hydro stated that the recent forecasting variances for capital budgets are attributable to the problems at Darlington and the resulting in-service delays. It pointed out that the forecasts for one year ahead have been much more accurate than the two year forecasts cited by Board Staff. Hydro submitted there is no evidence of a need to review the entire capital forecasting process.

6.2.81 Hydro cited more detailed testimony regarding heavy water production in previous hearings and maintained that full capacity production from the

Bruce Heavy Water Plant B is the most reliable and lowest cost method of meeting its needs. It stated, however, that the heavy water production plan, including possible mothballing and lower production levels, is under review in the business planning process.

Board Findings

6.2.82 The comments made and concerns expressed by the Board earlier in this chapter regarding OM&A expenses, apply equally well to the capital program costs. The Board notes the reductions made in the capital budget for 1992 and 1993, and expects that further capital program savings, as well as OM&A expense reductions will occur as a result of program evaluation and prioritization in the business planning process leading up to the 1993 approved budgets. The Board cannot overly stress the necessity for cost control measures to be intensified and to remain in effect and effective beyond the present poor economic conditions.

6.2.83 The Board joins Board Staff in urging Hydro to improve its forecasting of the capital budget, but finds that a review of the capital forecasting process is not warranted at this time.

6.2.84 The Board notes that the heavy water program is under review, and therefore a Board recommendation in response to AMPCO's expressed concerns is not required.

Bruce A Rehabilitation

6.2.85 The subject of a review of Hydro's capital programs is briefly discussed in Chapter 12 of this Report. Particular concerns were raised in the hearing regarding the rehabilitation of the four Bruce A units. Hydro's Board of Directors has committed $854 million to that program over eight years with an impact of $98 million in 1993.

6.2.86 The committed program does not include expenditures for retubing or replacing steam generators.

6.2.87 IPPSO witnesses stated that the total cost of refurbishing Bruce A could be as much as $3 billion, and that a more detailed review of alternatives to that program, particularly in view of the projected power surplus, was warranted.

6.2.88 IPPSO took the position that an adequate review was not possible during the hearing, and recommended that the hearing be continued in the fall of 1992 to deal specifically with the proposed expenditures for Bruce A. It further recommended that expenditures be delayed until the review is completed. The CEG supported the IPPSO position.

6.2.89 Board Staff supported the need for a review of the Bruce A expenditures, but took the position that such a review need not be done this fall given the limited effect of expenditures on 1993 rates. It also recommended public reviews of any of Hydro's major capital expenditures.

6.2.90 Hydro took the position that the present review process is appropriate and rejected the call for a further review in the fall of 1992. It argued that such a review would be justified only if the OEB determined there was strong evidence that the rehabilitation of Bruce A was unlikely to be economic and if it could not be adequately reviewed within the limits of the annual rate review.

6.2.91 Hydro also stated that a delay of the program would create a number of problems and would not be in the interest of ratepayers. AMPCO and the MEA supported Hydro in this regard.

Board Findings

6.2.92 The Board agrees with Hydro that a special hearing in regard to Bruce A is not necessary as there was no compelling evidence that the proposed rehabilitation will not be cost effective. As well, the matter can come before the Board at any future rate hearing and therefore, the Board does not feel that a special hearing is required.

7. DEPRECIATION EXPENSE AND ACCOUNTING POLICIES

Depreciation expense for 1993, as updated, is forecast at $1,521 million, an increase of $329 million over 1992. This represents an increase of 27.6 percent, most of which is attributable to the proposed coming into service of Darlington units 1, 3 and 4.

7.1 DEPRECIATION EXPENSE

Introduction

7.1.1 Hydro's Depreciation Review Committee ("DRC") defines depreciation expense as follows:

> The allocation of the service cost of fixed assets to the cost of power in relation to the contributions made by these assets to the provision of power to customers, where service cost is considered to represent original cost plus all other significant capital costs and recoveries related to an asset's service use.

7.1.2 Consequently, Hydro includes in depreciation expense estimated amounts to provide for depreciation of fixed assets in service, fixed asset removal costs, amortization of deferred costs and amortization of demand management costs. Table 7-1 provides a summary of Hydro's total depreciation expense for the years 1991, 1992 and 1993.

TABLE 7-1: DEPRECIATION
($ MILLIONS)

	Actual 1991	Forecast 1992	Forecast 1993
Fixed Assets in Service			
Generation			
Nuclear	465	542	746
Fossil	106	136	170
Hydraulic	25	29	33
Transmission/Distribution	139	144	166
Rural Distribution	69	68	73
Administration/Service/Minor Fixed Assets	68	75	83
	872	993	1,272
Fixed Asset Removal Provisions			
Station Rehabilitation Removal Costs	0	0	33
Fuel Channel Removal	79	56	72
Decommissioning			
Nuclear Stations	30	24	31
Fossil Stations	12	12	29
Asbestos Removal	18	15	2
Low and Intermediate Level Waste Disposal	0	0	14
Other Net Removal Costs	85	47	18
Amortization of Deferred Costs	39	39	39
Amortization of Demand Management Costs	3	16	31
Other	(2)	(10)	(3)
Total Depreciation	1,136	1,192	1,538
Adjustment per Final Update	–	–	(17)
Updated Total Depreciation	1,136	1,192	1,521

Sources: Main Submission - Table 7-2
Exhibit 1.1.4 - Final Update

7.1.3 This year's arguments dealt with, among other matters, the following important depreciation issues:

- Hydro's Depreciation Policies and Practices
- Provision for Low and Intermediate Level Radioactive Waste Disposal
- DRC Recommendations

HYDRO'S DEPRECIATION POLICIES AND PRACTICES

Positions of the Parties

7.1.4 Board Staff argued that Hydro had made limited progress since last year in reviewing its depreciation policies and practices. It argued that it is important that the correct assumptions be used with respect to average service lives of fixed assets and recommended that Hydro give serious attention to efforts in this regard.

7.1.5 IPPSO submitted that Hydro should be using more conservative estimates of the in-service and return-to-service dates for the Darlington units. It recommended that Hydro reduce its depreciation expense for 1992 and 1993 to reflect the further Darlington in-service delays as reflected in its argument relating to Chapter 5, Fuel and Fuel Related and Secondary Sales.

7.1.6 Hydro argued that Board Staff provided the same argument in H.R. 20 and added little evidence to demonstrate the need for further review of Hydro's depreciation policies and practices. With regard to IPPSO's argument Hydro responded by explaining that

> ... it is Hydro's policy to begin to depreciate an asset when it has been declared in-service. This then provides a tangible date from which the asset can be depreciated.

7.1.7 Hydro reiterated the position taken in its H.R. 20 argument as follows:

> Hydro has a comprehensive and appropriate set of accounting policies, including those related to depreciation, which accord with Generally Accepted Accounting Principles, have the concurrence of Hydro's external auditors and are subject to review by the OEB during Hydro's annual rate Hearings. An expert from Coopers & Lybrand at H.R. 19 shared the view that Hydro's depreciation policies and practices are reasonable and achieve depreciation-related objectives.
>
> The Depreciation Review Committee (DRC), in making its recommendations, ensures conformance with the Corporation's depreciation policies through ongoing contact with Hydro's accounting policy group. The specific recommendations of the DRC are also subject to review by Hydro's external auditors as well as by the OEB at these hearings.

Board Findings

7.1.8 As noted earlier, Hydro's 1993 provision for depreciation of $1,521 million represents an increase of 27.6 percent or $329 million over the $1,192 million provided for in 1992. The Board further notes that the in-service and return-to-service dates relating to the Darlington units account for a significant portion of the 1993 increase in depreciation expense.

7.1.9 The Board, in Chapter 5, Fuel and Fuel Related and Secondary Sales, makes certain findings related to the Darlington in-service and return-to-service dates which result in a reduction of $24 million in Darlington related depreciation for the 1993 rate year.

7.1.10 With regard to Hydro's depreciation policies and practices the Board is of the opinion that there is no persuasive evidence that the DRC has not adequately followed up and implemented the Coopers & Lybrand recommendations.

7.1.11 However, the Board is of the opinion that the work of the DRC will become even more crucial for the balance of the 1990s when greater emphasis needs to be placed on the remaining useful economic service lives of Hydro's fixed assets rather than on the physical lives of such assets. Further the Board finds that, as the new nuclear units at Darlington are brought into service and, given the serious ongoing technical difficulties being experienced in these high-cost assets, the recommendations of the DRC will have a significant impact on Hydro's depreciation policies and practices.

7.1.12 Accordingly, the Board finds that Hydro's depreciation policies and practices need to take on increasing prominence. The DRC should seriously consider the need to seek outside expertise to contend with these problems.

PROVISIONS FOR LOW AND INTERMEDIATE LEVEL RADIOACTIVE WASTE DISPOSAL

7.1.13 The DRC, in its February 1992 report, recommended that effective January 1, 1993:

> An amount of $14.0 million be included in the 1993 depreciation expense to provide for the future costs associated with the management and disposal of low and intermediate level wastes.

7.1.14 At its June 8, 1992 meeting the Hydro Board received a May 1991 document entitled "Radioactive Materials Management at Ontario Hydro: An Overview" from the Technical Advisory Committee with respect to its review of a plan for low and intermediate level radioactive waste disposal. Hydro's Board approved that document. However, because the document called for the development of a plan which was not yet finalized, the Board decided that it was premature to introduce a provision for disposal of such waste at this time, and decided to defer approval of such a provision for further consideration.

7.1.15 Hydro's Board of Directors, at its July 1991 meeting, approved a plan for the management of low and intermediate level radioactive waste. This plan was the basis for the $14 million provision originally included in Hydro's 1993 Rate Proposal but was subsequently removed as part of an update filed on June 12, 1992 pending further consideration by Hydro's Board. The issue therefore, is whether or not the $14 million provision should be included in Hydro's 1993 revenue requirement.

Positions of the Parties

7.1.16 Board Staff, the MEA, the CEG, Energy Probe and IPPSO all recommended that the $14 million provision for low and intermediate level radioactive waste disposal be included in depreciation expense for 1993. Although Hydro's Board of Directors has not agreed, it is the position of Hydro's management that the above provision should be included in depreciation expense and in the revenue requirement for the 1993 rate year.

Board Findings

7.1.17 The Board notes the evidence that a preliminary study has been completed which identified an estimate of $211 million (1990 dollars) as the cost of decommissioning the Radioactive Waste Operations Site ("RWOS") at the Bruce Complex and disposal of all waste stored up to the year 2010. The DRC has used this estimate as the basis of its recommended provisions and has calculated the 1993 provision of $14 million by an annuity method whereby equal annual provisions are collected over the expected operating life of the RWOS.

7.1.18 The Board also notes that the DRC's recommendations have been approved by the Audit Committee of Hydro's Board. Further, the Board observes that Hydro's Chair testified that he intended to recommend to his Board of Directors at its July meeting that the $14 million provision be reinstated in the 1993 revenue requirement.

7.1.19 In the Board's opinion there is evidence that it would have been reasonable and prudent for Hydro to have provided for such costs prior to 1993 and that failure to include such a provision in the 1993 rate year is unwarranted. Accordingly, the Board finds that the original $14 million provision should be reinstated as a component of depreciation expense and revenue requirement for the 1993 rate year.

Recommendation 7.1:

The Board recommends that Hydro include a $14 million provision for low and intermediate level radioactive waste disposal in depreciation expense for 1993. The impact of this recommendation is to increase the revenue requirement by $14 million for the 1993 rate year.

DRC RECOMMENDATIONS

7.1.20 In January 1992, Hydro released and filed with the Environmental Assessment Board an update to its Demand/Supply Plan. While this event occurred near the end of the DRC's deliberations of its recommendations for the 1993 rate year, it was able to make some initial assessments of the depreciation impacts resulting from the DSP update. The only additional change recommended was to effectively lessen the in-service life of heavy water and thereby increase depreciation expense by approximately $33 million in 1993. The DRC made its recommendations in February 1992.

7.1.21 Following an Executive and Audit Committee review of the DRC's February 1992 recommendations for 1993, the acceptance of the recommended change in heavy water in-service life was deferred pending a further assessment of the depreciation impacts of the DSP update. With that exception, the DRC's recommendations received executive approval.

7.1.22 In May 1992, after additional assessment of the DSP update, the DRC submitted its "Additional Recommendations of the Depreciation Review Committee" to the Executive and Audit Committee for its review and approval. The DRC found the following results of the DSP update of significance:

- no major supply approvals are being sought and major supply additions are not foreseen until around 2010;
- CANDU nuclear, thermal and purchases are available options for the long-term supply of electricity and no preferred supply option is presented; and
- several current fossil generating units will have their lives extended and have appropriate additional environmental controls.

7.1.23 The additional changes recommended by the DRC would increase the 1993 revenue requirement by approximately $21 million relative to the submission to the OEB on April 1, 1992. This increase includes the impact associated with the previously recommended change to in-service heavy water service life.

7.1.24 Hydro's executive and its Board of Directors have deferred consideration of all of these recommendations of the DRC that depend on Hydro's long-term DSP, pending the conclusion of the EAB hearing. Hydro expects that the report of the EAB will reduce the uncertainty about this plan and will provide the appropriate basis for making related depreciation decisions.

Positions of the Parties

7.1.25 Board Staff, the MEA and the CEG argued that Hydro had not demonstrated sufficient justification for deferring implementation of the DRC original and additional recommendations relating to the DSP update. Both Board Staff and the CEG argued that the $21 million impact of those recommendations be included in the 1993 revenue requirement. They also argued that Hydro deferred its decision because of the adverse impact on rates and net income. The MEA argued that Hydro should finally decide on these recommendations in time for inclusion in H.R. 22.

7.1.26 The CEG also argued that two of the DRC recommendations dealing with the service life and decommissioning of Bruce Heavy Water Plant B ("BHWP") be adjusted based on an out-of-service date of 1996. If those adjustments were made the revenue requirement would increase by a further $7 million to approximately $28 million in 1993.

7.1.27 Hydro argued that the impact of depreciation related to its future DSP is dependent on the details of the plan and that there is too much uncertainty at this time. Hydro also submitted that the report of the EAB will be "... a key milestone in adding clarity and detail to the plan" and that it would be premature at this time to make depreciation changes relating to future supply, without the benefits of the EAB's recommendations. Hydro denied that it was deferring its decision in this regard because of the adverse rate/net income impact.

Board Findings

7.1.28 The Board has some concern that Hydro may again be using the DSP hearing and the report thereon by the EAB as rationale to delay its decision regarding appropriate depreciation provision to be included in its 1993 revenue requirement. The Board notes that Hydro has taken the position that "... the report of the EAB and the subsequent firming up of

Hydro's plans will provide the appropriate basis for making depreciation decisions."

7.1.29 In the Board's opinion the question of the timing of the EAB report and recommendations is a factor to be considered in evaluating the wisdom of Hydro in deferring its depreciation decisions in this regard. It is by no means clear that such report will be available in time for H.R. 22 or even H.R. 23. Nor is it clear how much time Hydro would require to firm up and implement its plans arising from the EAB report. Hydro has acknowledged that it will not be making any decisions with respect to additional nuclear facilities for some number of years after the EAB decision.

7.1.30 The Board finds the argument of the MEA in this regard to be persuasive in that it suggested that the recent decision of Hydro's management to defer consideration of the DRC's recommendations is tantamount to a deferral of these matters for several years and that the impact of this course of action is to potentially improperly defer significant costs to future generations.

7.1.31 In conclusion, the Board will not further adjust Hydro's 1993 depreciation expense in regard to the recommendations of the DRC but expects that Committee to reassess its updated recommendations when conducting its 1993 review and making its recommendations in relation to 1994 depreciation.

Recommendation 7.2:

The Board recommends that Hydro's Executive and Audit Committee make a decision following the Depreciation Review Committee's 1993 recommendations relating to heavy water and the DSP update rather than deferring such decisions pending receipt of the EAB Report.

7.1.32 With regard to other depreciation matters raised by some of the parties, the Board has decided in this chapter to confine its review to those areas where proposals were made to actually adjust Hydro's proposed depreciation expense for the 1993 rate year.

7.2 ACCOUNTING POLICIES

Introduction

7.2.1 Hydro testified that, since H.R. 20, there have been two changes in its accounting policies. The first relates to the treatment of expenditures for computer applications software. The second relates to the treatment of Hydro's heavy water. Hydro also discussed the recommendations made by the Demand Management Service Life Review Committee on service lives for energy management programs. Certain other accounting matters were raised by some parties.

ACCOUNTING FOR COMPUTER APPLICATIONS SOFTWARE

7.2.2 Prior to January 1, 1992, Hydro capitalized acquisition expenditures for all computer applications software used in the design and construction of Hydro's fixed assets.

7.2.3 Effective January 1, 1992, the capitalization policy was extended to include capitalization of all application software projects with expenditures in excess of $2 million.

7.2.4 The impact of this change in the 1993 rate year is an estimated $12 million reduction to the revenue requirement.

7.2.5 Hydro testified that the change improves administrative effectiveness and, at the same time, it represents a better accounting treatment in that it improves the matching of costs and benefits. Hydro noted that capitalization of these expenditures is consistent with the trend that has emerged in the electrical utility industry, and that Hydro's external auditors have concurred that the new treatment is allowable under generally accepted accounting principles ("GAAP").

Positions of the Parties

7.2.6 No party took issue with Hydro's accounting changes related to these expenditures.

Board Findings

7.2.7 The Board finds that Hydro's capitalization of acquisition expenditures for applications software when greater than established materiality limits, effective January 1, 1992, will improve the matching of costs with benefits and is allowable under GAAP.

ACCOUNTING FOR HEAVY WATER

7.2.8 Under Hydro's current accounting for heavy water, all costs related to heavy water production and purchases are capitalized in a future-use pool. Interest is also added to the pool.

7.2.9 Heavy water assignments to new reactors are removed from the pool at the pool's average unit mass cost. Interest on the assigned heavy water is capitalized as part of the reactor cost until the unit is declared in-service. On that date, interest capitalization on that assignment ceases and the assigned heavy water begins to be depreciated as part of the in-service heavy water pool.

7.2.10 Heavy water used for loss make up purposes is costed at the average current cost of production and is charged to current operations. Sales of heavy water are costed at the average cost in the future-use pool at the time of sale, with any resulting gains or losses included in current operating results.

7.2.11 Effective January 1, 1993, the accounting will be modified as follows.

- Interest on costs accumulated in the future-use pool will be capitalized until the pool contains sufficient quantities of heavy water to meet forecast loss make up requirements for the committed nuclear program to the date heavy water is available from out-of-service nuclear stations. Production costs of heavy water produced beyond that point will be added to the pool, but do not attract interest.

- Commencing the year following the cessation of interest capitalization on the heavy water future-use pool, the costs accumulated in the pool will be amortized to current operations, using the sinking fund method, over the period through to the first year that heavy water from out-of-service nuclear stations is available for loss make up. The resulting amortization charges to current operations replace charges based on the costing of quantities required for loss make up. Until the amortization process commences, loss make up is costed at the average unit mass cost of heavy water in the future-use pool at the time of use.

- Revenues from sales of heavy water will be credited to the future-use pool account.

7.2.12 Hydro estimated that the accounting modifications increase OM&A costs in 1993 by $9 million while revenue requirement for 1994, 1995 and 1996 is estimated to increase approximately by $50 million, $104 million and $134 million respectively.

7.2.13 Hydro explained that the modifications are due to the changed circumstances in that, as a result of the recent update of the DSP, there is now less assurance that Hydro's CANDU program will continue beyond that currently committed. Consequently, heavy water is being produced primarily to satisfy current and future loss make up needs as well as for risk management purposes and secondarily for any incidental heavy water sales that may occur. To make efficient use of the heavy water plant, heavy water is being produced in advance of need and stored until required.

7.2.14 Hydro noted that collecting costs related to heavy water in a pool, and costing loss make up at the average unit mass cost in the pool at the time of use, achieves a match between costs and benefits. Also, crediting the future-use pool with sales revenues that exceed incremental costs allocates the economic benefit to future customers by reducing the total amount to be recovered through future charges.

Positions of the Parties

7.2.15 Board Staff argued that it would be better accounting if the interest relating to heavy water volumes already produced is charged to operations and that only interest relating to current production be capitalized.

7.2.16 With respect to heavy water sales, Board Staff argued that it would be more appropriate for Hydro to recognize gains or losses in the year they are incurred, and that if there are significant losses, Hydro's Board of Directors should exercise its ratemaking authority and defer recognition of the loss to future periods.

7.2.17 Board Staff took issue with the institution of an amortization charge for heavy water used for make up using the sinking fund method and recommended that heavy water used for make up purposes should be charged to operations. Board Staff also recommended that a separate pool should be established for heavy water produced for risk management purposes and that, since there is an equal benefit of this insurance to each year, this should be reflected by straight line amortization of this pool to the date at which sufficient quantities of heavy water are available from out-of-service nuclear reactors to meet future demands. Board Staff stated that in the event the Board found that amortization of the future-use heavy water is appropriate, the straight line method be used since this would be consistent with the amortization treatment of all other Hydro assets.

7.2.18 Both the CEG and the MEA endorsed generally the new accounting treatment. However, the MEA took issue with the sinking fund method of amortization. It noted that this represents a departure from Hydro's otherwise consistent policy in depreciating assets on a straight line basis.

7.2.19 Hydro maintained that its treatment of interest related to the future-use pool is analogous to its accounting practice for fixed assets under construction, which capitalizes interest as part of the cost of acquiring the asset, and that this practice was followed consistently with previous accounting for heavy water, in which case interest was capitalized on the costs accumulated in the future-use pool. Hydro stated that the new accounting recognizes the new business circumstances. With respect to Board Staff's argument that the current accounting treatment of sales of heavy water be continued, Hydro replied that its revised accounting treatment is simpler and more appropriate than what Board Staff recommended and avoids the need for rate rulings by Hydro's Board.

7.2.20 Hydro pointed out that the evidence was that it had considered the option of splitting the future-use pool into its two components and that it was determined to be more appropriate to consider the pool as providing a combined benefit which is provided reasonably equally over the benefit period.

7.2.21 With respect to the use of the sinking fund method rather than the straight line method, Hydro submitted that the selection of an amortization method must consider the nature of the individual asset and that the sinking fund method was chosen due to the uniqueness of the heavy water asset.

Board Findings

7.2.22 The Board generally agrees with Hydro that the business circumstances relating to heavy water production have changed since heavy water is no longer being produced for new capital additions, but is now being produced for loss make up and risk management purposes, as well as any sales that may materialize.

7.2.23 The Board notes the evidence that Ernst & Young, Hydro's external auditors, concur that the revised accounting for heavy water acquisition and use is in accordance with GAAP.

7.2.24 The Board finds that the concept of amortization of the future-use heavy water pool is appropriate but agrees with the MEA and Board Staff that the straight line method is appropriate and consistent with Hydro's general depreciation policy for fixed assets. The Board is simply not persuaded that there are more valid reasons to use the sinking fund method although both methods are acceptable under GAAP.

7.2.25 With regard to Board Staff's argument that the current accounting treatment of sales of heavy water be continued, the Board finds Hydro's modified accounting treatment to be simpler and avoids the need for Hydro's Board of Directors to make rate rulings which would dictate the accounting treatment.

7.2.26 In conclusion, the Board accepts Hydro's changed accounting for heavy water, effective January 1, 1993, except for the method of amortization to current operations of the costs accumulated in the heavy water pool. The effect of this change on the 1993 revenue requirement however, is not considered significant.

Recommendation 7.3:

The Board recommends that, effective January 1, 1993, Hydro amortize the costs accumulated in the heavy water future-use pool using the straight line rather than the sinking fund method.

SERVICE LIVES OF DEMAND MANAGEMENT PROGRAMS

7.2.27 The Demand Management Service Life Review Committee ("the Committee"), was established to review and recommend service lives for both approved and new demand management programs and assess the remaining service lives assigned to programs that were implemented in prior years. The Committee has completed its first review and Hydro filed the Committee's recommendations with its prefiled evidence.

7.2.28 The service lives recommended by the Committee have a weighted average of approximately 15 years. Hydro noted that a 15 year life is also being used for planning purposes for programs not yet reviewed by the Committee.

7.2.29 The adoption of the 15 year recommendation, from the 10 year period previously used, results in an estimated decrease in the revenue requirement for 1993 of $6 million.

7.2.30 The evidence revealed that while the Committee has the responsibility to establish program-specific service lives, the establishment of the assumed service life is the responsibility of Energy Management.

Positions of the Parties

7.2.31 The MEA recommended that Hydro maintain the 10-year service life assumption for its planned demand management programs on the basis that no sufficient evidence exists to warrant a change to 15 years. It also recommended that the service life assumption for Hydro's proposed demand management programs should be established by the Committee, not Energy Management. The CEG, on the other hand, recommended that Hydro capitalize all of its demand management expenditures.

7.2.32 Hydro argued that the evidence provided at the hearing substantiates the use of a 15 rather than a 10 year service life assumption. Hydro also stated that the responsibility for service life assumptions for planning purposes rests with Hydro's line management. With respect to the CEG recommendation, Hydro stated that such treatment would be inconsistent with GAAP.

Board Findings

7.2.33 The Board notes that the recommendations from the Committee's review are based on the professional judgement of its members having considered the technical, financial and other supporting evidence provided by relevant Hydro units involved in the planning, implementation and operation of Hydro's demand management programs.

7.2.34 The Board finds that the evidence adequately supports a change in the amortization period from 10 to 15 years and that a service life assumption of 15 years is considered appropriate for planning and accounting purposes.

7.2.35 The function of the Committee, in the Board's opinion, is similar to that of the DRC in that each provides an annual technical and financial review of the estimated service lives of and amortization or depreciation rates for

Hydro's approved capitalized assets. In both cases the recommendations are submitted to the Senior Vice-President, Finance, for Executive Approval. The Board finds no valid reason for changing this reporting relationship.

7.2.36 The Board does not accept the CEG's argument that Hydro should capitalize all of its demand management expenditures, since to do so would be deferring all costs related to demand management measures without examining whether future benefits will arise. Such accounting treatment does not accord with GAAP, which permits deferral of only those costs that have reasonably assured future benefits.

RIO ALGOM PROVISION

7.2.37 Hydro declined to follow the Board's recommendation in H.R. 20 to commence amortization of the $450 million loss relating to the Rio Algom uranium contract in 1992 and instead opted to commence the amortization of this substantial loss in 1994. It accepted, however, the Board's recommended 10 year amortization period.

7.2.38 IPPSO argued that Hydro's choice of timing is no more appropriate now than it was at the time the issue was first reviewed and that this Board should recommend that amortization begin in 1992.

7.2.39 The CEG argued that there is no matching justification to defer the commencement of the amortization and that accounting practice should not be influenced by rate considerations, since those could be accommodated in the context of a net income discussion. It recommended that Hydro should commence amortization of the Rio Algom loss in 1993.

7.2.40 Hydro argued that accounting principles recognize that corporations operating in a rate-setting environment can defer the loss, if it is specifically recoverable through future rates.

7.2.41 Hydro further argued that because 1992 rates have already been set without inclusion of this cost, then specific recovery would not be achieved by charging the amount to 1992 operations.

Board Findings

7.2.42 In H.R. 20 the Board recommended in its Report dated August 26, 1991, before 1992 rates were set, that Hydro:

> ... begin the amortization of the loss relating to the Rio Algom contract in the 1992 rate year rather than postponing the recovery of such loss to some period of years beyond 1992 as proposed by Hydro. The Board further recommends that the period of amortization be 10 years. The impact of this recommendation is to increase the revenue requirement by $45 million for the 1992 rate year.

7.2.43 On November 27, 1991 Hydro forwarded to the then Minister of Energy its responses to the Board's recommendations. The response was that "... Hydro does not agree that amortization should begin in 1992. Amortization of the loss relating to the Rio Algom contract will begin in 1994, as this treatment avoids charging additional costs to customers during 1992 and 1993 when significant upward cost pressures are being forecast."

7.2.44 Hydro, again this year, was quite clear that the period selected for recovery of the loss is based on rate setting considerations not accounting principles.

7.2.45 The Board finds that it cannot support IPPSO's argument that amortization should begin in 1992 since 1992 rates have already been set and implemented.

7.2.46 The Board has again seriously considered this timing issue. While tempted to recommend the argument of the CEG that amortization should commence in the 1993 rate year rather than in the 1994 rate year as proposed by Hydro, the Board is of the opinion that Hydro's Board of Directors is unlikely to alter its decision given the ongoing upward pressure on 1993 rates. Quite clearly, absent a reversal of that 1992 decision by Hydro, such a recommendation would be futile. However, the Board fully expects that in Hydro's 1993 filing of its 1994 rate proposal in H.R. 22 it will, in fact, include the first year amortization of the Rio Algom loss, regardless of other upward pressures on rates which may be forecast at that time.

PICKERING PAYBACK AGREEMENT

7.2.47 Ontario Hydro, Atomic Energy of Canada Limited ("AECL") and the Province of Ontario are parties to a joint undertaking for the construction and operation of units 1 and 2 of Pickering nuclear generating station, with ownership of these units being vested in Ontario Hydro. Hydro is required to make monthly payments, termed "payback", until the year 2003 to each of AECL and the Province in proportion to their capital contributions. Payback can be interpreted in general to be the net operational advantage of having the power generated by Pickering units 1 and 2, compared with power generated by coal-fired units similar to Lambton units 1 and 2.

7.2.48 Due to the shutdown of the nuclear units for the period 1983 to 1988, the payback calculations resulted in negative payback amounts. The accumulated negative payback amounts, plus interest, are being offset against positive payback amounts payable over the remaining term of the agreement. However, Hydro has determined that if interest continues to accrue on the outstanding receivable balance, then the current accumulated negative amounts plus the future additional interest may not be fully offset against the future positive payback amounts which are forecast over the remaining life of the agreement. It also noted that from a legal point of view it cannot force collection of any outstanding negative payback amounts after the agreement ends. For these reasons, it determined that the appropriate approach is to establish a provision to offset additional interest on the outstanding payback receivable balance. Consequently, interest accrued on an ongoing basis is being provided for as an operational expense. For 1993 the amount of $53 million is being charged to operations.

7.2.49 The CEG argued that Hydro should consider recovery of the annual interest cost of negative payback balances by way of set off against other amounts owing to AECL and the Province. Hydro replied that the agreement does not have a mechanism for the collection of outstanding accumulated negative payback against other amounts owed.

Board Findings

7.2.50 The Board notes that Hydro had considered the CEG alternative but concluded that the agreement does not allow it. Accordingly, the Board finds that Hydro's $53 million provision in its 1993 operating expenses to offset additional interest on the outstanding payback receivable balance is reasonable.

ACCOUNTING TREATMENT — NUGS

7.2.51 NUG contracts provide essentially for two components within the purchase rates paid. The first relates to the avoided cost and the second component is front end loading. With respect to the second, Hydro allows a portion of the rates pursuant to the first component that would otherwise be paid in later years of the contract to be moved to the early years on a present value basis. Because of the discounting principle, the essence of front end loading is that it is a loan in the early years, which is then repaid by rate reduction in later years. Hydro in fact requires security for the repayment of these amounts.

7.2.52 IPPSO took the position that because of front end loading an asset is created for the benefit of future ratepayers and recommended that Hydro, therefore, "... change its accounting practices and, if necessary, the structure of its non-utility generation contracts, so that the impact of front loading of non-utility generation contracts is borne by the ratepayers that benefit therefrom."

7.2.53 Hydro disagreed with IPPSO's recommendation on the grounds that there is not sufficient basis under GAAP to recognize the amount of front end loading as an asset.

7.2.54 However, Hydro indicated that it is examining the accounting relevant to NUG contracts that may utilize a revised rate structure, whereby the amount that Hydro pays to the NUG would consist of two components: the cost of purchased power and the amount of the premium. According to Hydro, this structure does appear to allow the second component of purchase rates to be set up as an asset so that it is not charged to rates in the initial years. Hydro indicated that if the proposed accounting treatment is adopted, it will be available for review at next year's hearing.

Board Findings

7.2.55 The Board expects Hydro to report in H.R. 22 the results of its review relating to its revised rate structure so that the accounting treatment proposed by Hydro can be evaluated in the 1994 rate setting process.

8. BORROWING, INTEREST AND FOREIGN EXCHANGE EXPENSE

Hydro estimated its updated total borrowing requirement for the 1993 rate year to be about $4.3 billion, $3.0 billion for refinancing of existing debt and the $1.3 billion balance for net borrowing requirements. Its updated total borrowing requirement for 1992 was estimated to be approximately $4.6 billion. The updated expenses associated with servicing its debt was forecast by Hydro to be about $3.5 billion in 1993 compared with $2.7 billion in 1992.

8.0.1 As shown in Table 8-1, net borrowing, which reflects total borrowing less debt retirement, is expected to be $1,243 million in 1993, a decrease of $1,171 million from the 1992 level of $2,414 million.

8.0.2 Interest expense shown in Table 8-2, which reflects gross interest less interest capitalized, interest associated with fuel supplies and interest earned on investments, is projected to increase by $813 million in 1993 to $3,463 million. About $700 million of the increase is attributable to the bringing into service of Darlington unit 4 in 1993 and to the full year impact of Darlington units 1 and 3.

8.0.3 Foreign exchange expense is shown in Table 8-3. It is projected that a loss of $25 million will occur in 1993, an increase of $12 million from the 1992 level. Hydro expects the value of the Canadian dollar to deteriorate in 1993, and foreign exchange hedges have been entered into in 1992 to protect 1992 net income from fluctuation in the exchange rate.

TABLE 8-1: BORROWING
($ MILLIONS)

Particulars	**Actual 1991**	**1992**	**1993**
Investment in Fixed Assets	3,934	4,098	3,024
Debt Retirement			
Maturities - Long-Term	1,673	2,096	2,874
- Short-Term*	730	735	150
Calls	637	210	0
Other	733	(846)	0
	3,773	2,195	3,024
Changes in Other Assets & Liabilities	246	167	290
Total	7,953	6,460	6,338
Less: Funds from Operations	1,405	1,710	2,064
Borrowing Requirement	6,548	4,750	4,274
Long-Term Borrowing	5,813	4,600	4,124
Current Year-End Short-Term Debt	735	150	150
Borrowing	**6,548**	**4,750**	**4,274**
Adjustment per Final Update	___	(141)	(7)
Updated Borrowing	**6,548**	**4,609**	**4,267**
Debt Retirement	3,773	2,195	3,024
Net Borrowing	**2,775**	**2,414**	**1,243**

* Reflects retirement of previous year-end short term debt.

Sources: Main Submission - Table 8-1
Exhibit 8.1.0 - Final Update

8.0.4 The Corporation's borrowing program will again be closely coordinated with that of the Province of Ontario to facilitate effective access to capital markets.

8.0.5 Hydro noted that the generally favourable capital market in 1991 and the strength of the Canadian dollar permitted the Corporation to complete several Global Canadian dollar issues, a new financial instrument offered by Hydro. It also noted that the demand for Canadian securities in 1992 had been more favourable than it anticipated and, as a result, at the time of the hearing it had completed about 90 percent of its 1992 borrowing requirements. The financing strategy for 1993 will be developed in the fall of 1992.

8.0.6 Due to the borrowing levels in recent years being greater than forecast, Hydro instituted a mechanism whereby any increase in borrowing requirements above $5 billion requires approval from Hydro's Finance Committee following an assessment of the cost and risk implications by the Finance Branch. The evidence also revealed that Hydro was content with raising capital in fewer but larger debt issues. The Global Canadian dollar issue in January 1992 raised $1.5 billion which was Hydro's largest ever bond issue.

8.0.7 The evidence also revealed that Hydro exercises its call options on bonds when a reduction in interest rates provides a cost saving greater than 50 basis points as long as, in its view, the refinancing of the calls is not expected to adversely affect the successful overall completion of its borrowing program. The Corporation noted that five U.S. issues were called and refinanced in 1991 for a total present value savings of $23 million. In 1992, up to the time of the hearing, Hydro had called two issues, one U.S. and one Canadian, for a total savings of $4 million.

8.0.8 To diversify the interest risk on new bonds issued by Hydro, the rate setting on the borrowing for a particular year is spread through five

TABLE 8-2: INTEREST
($ MILLIONS)

Particulars	Actual 1991	1992	1993
Bonds and Long-Term Notes	3,448	3,659	3,750
Other Long-Term Debt *	6	4	3
Provisions	122	121	147
Short-Term Notes	7	4	10
Gross Interest	3,583	3,788	3,910
Less:			
Capitalized in Capital Program	1,155	1,049	427
Interest Associated with Fuel Supplies	38	10	8
Earned on Investments and Other	157	115	60
Interest	2,234	2,613	3,416
Adjustment per Final Update	——	37	48
Updated Interest	2,234	2,650	3,463

* Includes heavy water plant purchase agreement, head office lease agreement and other capital leases

Sources: Main Submission - Table 8-3
Exhibit 8.1.2 - Final Update

quarters commencing with the fourth quarter of the previous year. The evidence revealed that at the time of the hearing Hydro's borrowings were almost two quarters ahead. The spread in interest rate setting is accomplished by using the funds raised from the issuance of Hydro bonds to purchase Government of Canada bonds and selling the latter bonds over the five quarter period. The Corporation noted that there is typically a difference of 65 basis points between the investment rate and the issuance rate, but that this spread or holding cost to Hydro translates to about a 2 to 3 basis points premium to the overall cost of the bond. The Corporation maintained that this is a reasonable cost to assume in the interest of separating issuance from rate setting which diversifies and manages the borrowing risk.

TABLE 8-3: FOREIGN EXCHANGE COSTS
($ MILLIONS)

Particulars	**Actual 1991**	**1992**	**1993**
Amortization of Foreign Exchange	(20)	40	18
Hedging Activities	33	(18)	4
Other	(6)	0	0
Foreign Exchange	7	22	23
Adjustment Per Final Update	—	(9)	2
Updated Foreign Exchange	7	13	25

Sources: Main Submission - Table 8-5
Exhibit 8.1.2 - Final Update

8.0.9 The Corporation testified that its foreign exchange management strategy for 1993 is similar to that of 1992 and 1991 which was first introduced and discussed in H.R. 20. The main focus of the strategy remains the protection of the Corporation's net income and balance sheet from a significant decline in the Canadian dollar. The tolerance levels or thresholds targeted for 1993, which were established in 1991, are $75 million for net income and $750 million for the balance sheet. Both thresholds represent the maximum loss variance allowed from forecast before hedging is triggered. The $75 million net income threshold represents an increase from the $15 million established in the prior year while the $750 million balance sheet threshold represents a reduction from $1.5 billion established for the 1992 year.

8.0.10 By the end of 1992, Hydro's foreign currency debt is expected to decline to about 16 percent of total debt compared to 21 percent at the end of 1991. Its un-hedged foreign currency debt is estimated to represent about 10 percent of its total debt outstanding at the end of 1992.

8.0.11 Hydro estimated that a 1 percent increase in the forecast long-term interest rate in 1993 would decrease projected net income by $36 million, and a 1 cent U.S. increase in the Canadian dollar from the forecast for the entire year would increase such income by $8 million.

Positions of the Parties

8.0.12 Board Staff expressed concern about the variances in actual borrowing requirements from forecast observed in recent years. It appeared to Board Staff that the $5 billion ceiling is linked only to capital availability concerns and not to variances from budget. On the matter of Hydro's pre-borrowing policy, Board Staff recommended that Hydro consider further pre-borrowing in light of current low interest rate levels.

8.0.13 It submitted that the increase in the net income threshold is inconsistent with the direction and magnitude of targeted net income in 1993 and that the new balance sheet threshold represented a more realistic level. However, Board Staff suggested that Hydro provide further analysis to justify both thresholds.

8.0.14 Board Staff also suggested that Hydro re-evaluate its current policy of calling its bonds as it might be worthwhile for Hydro to lower the 50 basis points benchmark.

8.0.15 It maintained that Hydro did not comply with the Board's expectation in H.R. 20 that Hydro submit evidence in the present case that it had completed the implementation of the Cresap recommendations relating to performance measures in the Treasury Division and that Hydro should provide this information in next year's rate review.

8.0.16 The MEA supported Hydro's approach to managing the risk of capital availability in 1992 by in effect building up a reserve of liquidity through pre-borrowing and at the same time diversifying the interest rate risk, and urged Hydro to continue this protection policy. However, the MEA cited Hydro's acknowledgement that it does not have specific performance measures of different debt maturities and recommended that Hydro establish comprehensive performance measures for the Treasury Division. Hydro disagreed with the MEA that such specific performance measures were needed.

8.0.17 The MEA also recommended that the net income threshold be reviewed and that Hydro consider a more conservative approach in setting thresholds for 1994.

8.0.18 Hydro disagreed with Board Staff's argument that borrowing limits should be linked to percentage variances from budgeted borrowing requirements rather than being linked to capital availability only. It argued that borrowing is required to meet capital expenditures, to refinance maturing debt, to pre-borrow and to prematurely retire debt including bond calls. The last two items are highly variable since they depend on changing market conditions. Hydro further argued that to lower the 50 basis point criterion for bond calls will result in higher borrowing.

8.0.19 Hydro's response to Board Staff's recommendation concerning pre-borrowing is essentially that it is not appropriate at this time, given the uncertainty over the direction of interest rates. It also argued that more pre-borrowing would obviously result in higher borrowing. Hydro is therefore not prepared, at this time, to take the view recommended by Board Staff.

8.0.20 With regard to Board Staff's argument relating to the net income threshold, Hydro argued that the $75 million threshold was set in 1991 at the time of finalizing the 1992 rates and that while net income is now projected to be lower than when the threshold was set, it has been reviewed and the Finance Committee has approved that no change be made at this time.

8.0.21 Hydro contended that for the financing and foreign exchange management programs, a comprehensive set of measures is now in place which relate to the new policy implementation and that it was reviewed in H.R. 20 in 1991.

Board Findings

8.0.22 The Board does not accept Board Staff's arguments relating to borrowing limits or the lowering of the 50 basis point criterion. In the Board's view a borrowing limit based on a percentage variation from planned borrowing is too rigid and fails to take into account market conditions and the need to borrow to finance the cost of legitimate capital expenditures.

8.0.23 In considering Board Staff's recommendation that Hydro should consider further pre-borrowing to take advantage of current lows in interest rates in order to reduce future interest cost, the Board is not satisfied, at this time, that such strategy would be prudent. In reaching this conclusion, the Board has relied on the testimony of Mr. Chee, Hydro's Treasurer, that there was, at the time of his evidence, a high degree of uncertainty as to the direction of interest rates and the duration of the cycle. In the Board's view, Hydro's current policy in this regard is prudent and maintains the Corporation's debt ratio at a more reasonable level.

8.0.24 With regard to Board Staff's and the MEA's arguments relating to net income thresholds, the Board notes Mr. Chee's evidence that in order to achieve a reduction in the threshold of $30 million, i.e. from $75 million to $45 million, it would cost Hydro about $9 million. The Board is of the view that a $9 million expenditure to achieve a $30 million potential loss reduction is not a prudent or efficient risk/cost trade-off. Hydro conceded, however, that if the risk/cost trade-off becomes more favourable, lowering the threshold may be considered, if at that time the added protection is considered necessary. The Board finds that Hydro should continue its ongoing evaluation process in this regard and, if the net income is projected to be smaller, Hydro should consider adopting a more conservative threshold. The Board expects Hydro to report on this matter in H.R. 22.

9. NET INCOME, REVENUE REQUIREMENT AND RATE OF INCREASE

Hydro's 1993 original rate proposal for an 8.6 percent rate increase included a level of net income of $318 million. This amount fell short of the $572 million Statutory Debt Retirement ("SDR") level by $254 million. The June 30, 1992 final update forecast a net income of only $269 million which is $303 million below the SDR amount of $572 million.

9.0.1 The Power Corporation Act requires Hydro to include in rates an appropriation for the SDR fund, and authorizes a provision for the Reserve for Stabilization of Rates and Contingencies ("RSRC"). Together these amounts are accounted for as net income, that is, the amount of revenue required over and above what is necessary to account for all expenses. Hydro's revenue requirement is the sum of its total operating costs, plus net income, less secondary revenues.

9.0.2 The governing principle of Hydro's corporate financial policy on net income is to "establish net income requirements to comply with the statutory requirement for debt retirement, to stabilize the pattern of rate increases, and to ensure the lowest long-term rates to customers while maintaining the financial soundness of the Corporation".

9.0.3 Until H.R. 19, target net income was based on an interest coverage ratio of 1.5 times capitalized interest and 1.05 times interest charged to operations. Since H.R. 19, the Corporation has adopted an interim target net income policy which is based on an interest coverage ratio in the range of 1.20 to 1.30 and a minimum cash flow coverage ratio of 1.0. As in the former policy, the new policy embraces the notion of trade-offs between financial performance and rate smoothing.

9.0.4 In its original filing, the proposed average rate increase in 1993 would recover forecast operating costs and net income of $318 million which reflected an estimated interest coverage ratio of 1.08 This would have required a withdrawal of $254 million from the RSRC to provide for the SDR appropriation of $572 million, thereby reducing the RSRC to $1.4 billion at the end of 1993, that level being approximately the same as it was in 1983. The original filing indicated that, in order for Hydro to achieve the lower end of the target range for financial performance in 1993, rates would have to increase by an average of 13.5 percent. Alternatively, a rate increase at the forecast 3.1 percent rate of inflation for 1993 would result in an operating loss of about $100 million. The Corporation maintained that, while the prospect of withdrawing from the RSRC in 1993 is undesirable, it was considered acceptable given the current and anticipated economic conditions, together with general societal expectations for price restraint. Hydro testified that it expected to reach the lower end of the target interest coverage ratio of 1.20 in 1995.

9.0.5 Hydro explained that it examined the effect of various levels of net income for 1993 and that the rate increase alternatives considered by Hydro's Board of Directors ranged from a high of 13.5 percent incorporating an interest coverage ratio of 1.2, to a low of 3.8 percent which was Hydro's original forecast for 1993 inflation.

9.0.6 In its June 30, 1992 final update, Hydro's forecast net income for 1993 was reduced by $49 million to $269 million which reflected an estimated interest coverage ratio of 1.07 and a debt ratio of 0.840. This level of net income would require a withdrawal of $303 million from the RSRC in order to meet the SDR of $572 million.

9.0.7 The evidence revealed that in three of the last five years, actual net income had fallen below the SDR in 1987, 1990 and 1991. In fact, in 1991 Hydro had planned a relatively low level of net income so as to moderate the increase in electricity prices, and had planned for a withdrawal from the RSRC in order to meet its SDR. In the current 1992 year as well as for the 1993 rate year, Hydro has continued this planning policy. In other words, Hydro's proposed rates deliberately incorporated a level of net income lower than the SDR. To the extent that net income in 1993 will be below the SDR level as forecast, it will mark the fourth consecutive year that the RSRC is drawn down.

Positions of the Parties

9.0.8 In their final submissions, several parties made recommendations with respect to Hydro's planning assumptions and, in most cases, estimated the impact of these on net income or on revenue requirement for the 1993 rate year. Hydro reviewed these estimates, identified and corrected any material miscalculations, and calculated any impacts which were not calculated by the parties. Except for the recommendations of the MEA, which are relative to Hydro's original submission, all other recommendations are relative to Hydro's updated financial outlook as of June 30, 1992. Also, except for the recommendations of Board Staff, which are expressed in terms of net income, all other recommendations are expressed in terms of revenue requirement. Hydro cautioned that its estimation of the impacts does not imply acceptance of the positions or recommendations advanced by the parties, except where such changes reflect Hydro's updated financial outlook. The resulting impacts and rate increases recommended by the parties and as corrected by Hydro are shown in Table 9-1.

9.0.9 Based on the parties' recommendations, Table 9-1 also shows the relationship between net income and SDR for the 1993 rate year. Board Staff and three of the intervenors recommended that the net income should equal the SDR level for 1993 and their recommended rates of increase reflected this element. AMPCO recommended a zero rate increase which, it suggested, is attainable by a 30 percent reduction in OM&A expenses, no net income and a withdrawal of $890 million from the RSRC.

TABLE 9-1: RECOMMENDATIONS OF THE PARTIES

Parties	Impact of Recommendations on Revenue Requirement Excluding Recommendations on Net Income ($ Million)	Recommended Net Income in Relation to SDR	Rate Increase
Ontario Hydro		Lower	8.60%
Board Staff	-150	Equal	10.50%
Hydro	-71		11.00%
CEG	-26	Equal	12.20%
Hydro			12.00%
IPPSO	-308[1]	Equal	11.85%
Hydro	-126[1]		13.00%
MEA	-332	Equal	7.60%
Hydro	-298		7.50%
AMPCO	-692[2]	No Net Income	zero
Hydro	-700[2]		

[1] Includes $50 million contingency
[2] OM&A expenses only — other potential impacts not quantified

Source: HR 21 Arguments

9.0.10 Except for AMPCO, the recommended rate increases range from about 7.5 percent to about 13.0 percent. Energy Probe did not quantify an overall rate change since a number of its recommendations were directional rather than specifically quantified. Windsor Utilities Commission and TWG Consulting submitted that Hydro should reduce its proposed rate increase for 1993 but did not specify an amount.

9.0.11 Board Staff expressed concern that Hydro's reliance on RSRC withdrawals will eventually adversely affect the bond ratings of the Province and Hydro. Board Staff noted that Hydro's 1.07 interest coverage ratio is the lowest ratio for a Canadian utility as compared to the average ratio of 1.15 for the North American composite of non-private utilities. Board Staff submitted that Hydro's net income for 1993 is too low since it does not reflect the relative increase in net income risk and in contingent liabilities, and because it requires a large withdrawal from the RSRC in order to meet the SDR.

9.0.12 As in H.R. 19 and H.R. 20, the MEA noted in the current proceeding that Hydro's financial forecasts tended to vary substantially over a relatively brief period of time and that various uncertainties could have been anticipated earlier, and appropriate adjustments could have been made in the financial forecasts. The MEA submitted that Hydro continued to ignore conservatism in its financial forecasts and that, given the magnitude of the risks facing Hydro in 1993, including a possible adverse ruling on the Manitoba purchase contract and the Denison arbitration, it is imperative that Hydro significantly increase the use of contingencies in 1993. The MEA also recommended that an outside agency review Hydro's financial forecasting at the corporate level. The MEA repeated the suggestion it made last year that Hydro's net income policy should be revised to give primary weight to financial soundness and protecting the Corporation against adverse outcomes. Moreover, it argued that the Power Corporation Act does not permit planned withdrawals from the RSRC to meet SDR in circumstances that presently exist.

9.0.13 IPPSO suggested that the Board direct Hydro to prepare and file in H.R. 22 a report on the calculations of revenue requirement and the rate increase impacts, including all methods, assumptions and parameters as well as an analysis of alternative methods and a recommended method. IPPSO claimed that Hydro's rate increases are increasingly voluntary in nature and, as such, more information should be available detailing the availability of energy management and other load reduction options to specific customer groups, so that this Board and Hydro's board can establish rates that reflect the voluntary nature of the increases in electricity costs for some or all customer groups.

9.0.14 Hydro acknowledged that its financial performance is below desired levels but noted that this is not a cause of undue concern to the Corporation. Hydro submitted that a review by an outside agency of its financial forecasting process at the corporate level is unnecessary.

9.0.15 Hydro viewed the proposed 1993 withdrawals from the RSRC to be appropriate in light of the circumstances it now faces and argued that the purpose of the RSRC is to provide for contingencies and rate stabilization. It submitted that its proposal best represents the appropriate balance of concern for customers and financial soundness. It rejected the MEA's argument that it does not have the legal authority to plan withdrawals from the RSRC. Hydro submitted that AMPCO's recommendation of no rate increase in 1993 requires unrealistically large reductions in OM&A expenses and makes an unjustifiably large withdrawal from the RSRC.

9.0.16 Hydro questioned the value in having a formal policy of including contingency amounts given the considerable judgement exercised concerning the magnitude and direction of the risk which surrounds forecasts. Hydro noted that the matter of variation in its financial performance has been addressed in prior cases and that its track record is good, especially considering the dynamic environment in which Hydro operates. It pointed out that the variation in costs from forecast is directly attributable to variations in the underlying planning assumptions and not to the forecasting process.

9.0.17 Hydro submitted that IPPSO's recommendation regarding the filing of an impact report in H.R. 22 is unnecessary in that the information is already provided to the parties to the hearing.

Board Findings

9.0.18 The Board observes that the arguments submitted by the parties in H.R. 21 relating to net income levels, withdrawals from the RSRC and rate increases, contain a wide array of recommendations which have varying but significant impacts on both Hydro's customers and on the Corporation's prospective financial soundness for the 1993 rate year.

9.0.19 The evidence adduced at this year's hearing and resulting arguments again make it clear that Hydro continues to face very serious challenges in the 1990s due to significant ongoing financial and cost pressures on the one hand and the need to balance those pressures against an expressed concern for its customers. Table 9-2 sets out certain of Hydro's key financial performance indicators with planned rate increases for 1993 and 1994 as presented in H.R. 20 and compares them with those presented this year. It also shows Hydro's H.R. 21 forecast for 1995.

9.0.20 The magnitude and impact of Hydro's rate increases is always a major concern to the Board. The fact that Hydro's customers have recently experienced significant rate increases of 8.6 percent and 11.8 percent effective January 1, 1991 and January 1, 1992 respectively, has caused the Board to be even more seriously concerned about how best to deal with Hydro's proposed 8.6 percent rate increase effective January 1, 1993. If approved at that level, the combined all customer average increase over the three year period 1991, 1992 and 1993 would amount to 29.0 percent and 31.8 percent when compounded.

TABLE 9-2: KEY FINANCIAL PERFORMANCE INDICATORS WITH PLANNED RATE INCREASES

Performance Indicators	1993		1994		1995
	HR 20	HR 21	HR 20	HR 21	HR 21
Rate Increase Planned	8.9	8.6	7.8	6.4	4.1
Debt Ratio	0.845	0.840	0.832	0.832	0.824
Interest Coverage Ratio	1.07	1.07	1.22	1.16	1.20
Net Income $ Million	288	269	885	616	785
SDR	571	572	608	609	640
RSRC Appropriations	(283)	(303)	277	7	145

Source: H.R. 20 Report - Table 9-1 and Exhibit 9.4.3 June 18 Update
Exhibit 1.1.4 - Final Update
Exhibit 9.1.3

9.0.21 The Board notes that, while Hydro's debt ratio for 1992 and 1993 is forecast this year to decline slightly over the corresponding forecast last year, interest coverage ratios are forecast to increase in 1992 to 1.11 but will fall back to 1.07 in 1993. As noted earlier, Hydro's current net income policy is to provide an interest coverage ratio in the range of 1.20 to 1.30. Clearly, its proposed net income level for 1993 will fall short of that objective.

9.0.22 The Board notes that the "Interim Net Income Policy" which was approved by Hydro's Board of Directors in May 1991 continues to provide direction to the Corporation in the determination of net income. The Board further notes the evidence as of June 10, 1992, that since its January 31, 1991 Report on Ontario Hydro's Net Income Policy resulting from the Minister's Letter of Reference dated March 27, 1990, there have been no discussions between Hydro and the Ministry specifically related to Hydro's net income policy. It continues to be the Corporation's position that it is fully prepared to discuss with the Government any initiative it may propose aimed at improving Hydro's net income policy.

9.0.23 As a reminder, the Board again notes Hydro's H.R. 19 evidence contained in its "Interim Statement of Corporate Financial Policy on Net Income". Under the heading "Decision Rules" the following language is still relevant to the determination of 1993 net income:

1. Hydro's financial soundness shall be maintained at a level that does not prejudice the Provincial credit rating and which maintains the ability of the Corporation to attract capital at competitive rates.

2. Primary indicators of financial soundness shall be the debt ratio and the ability to meet interest payments.

3. Financial performance targets shall be based on an interest coverage in the range of 1.20 to 1.30 times.

4. The annual net income requirement shall be established taking into account rate smoothing and capital availability considerations and thus may differ from that required to meet target levels of financial performance.

5. Under normal circumstances net income requirements will be established at or above the provision for statutory debt retirement, will result in a cash flow coverage ratio above 1.0 and will not lead to any significant deterioration of the debt ratio.

9.0.24 While the Board must confine its comments in this Report essentially to the 1993 rate year, it nonetheless feels obligated to take account of Hydro's proposed strategy in moving its net income to target levels by 1995.

9.0.25 Hydro's Board of Directors proposal to the Minister of an 8.6 percent rate increase and a net income level of $318 million for 1993 would result, according to the evidence, in the Corporation reaching the lower end of its financial target range of 1.20 to 1.30 by 1995. In H.R. 20 Hydro had hoped to reach its target range by 1994.

9.0.26 The Board notes the following comments by Mr. Eliesen related to the proposed increase:

> ... I understand that Ontario Hydro's proposed rate increase is a heavy burden for our customers to bear, particularly at a time when they are being squeezed on other fronts by the tough economic times we are all experiencing.
>
> We have had to take account of the market situation. We have had to take account of the corporation's fiscal integrity. And we have had to take account of the potential impact on our customers. And the Board in March believed that the 8.6 percent increase proposed was the one that best reconciled all of those factors that I have just mentioned.
>
> Now, thanks to some of the cost-cutting measures I have outlined, we were at least able to keep the required increase below double digits; but, and we acknowledge this, we also had to once again draw down on our rate stabilization reserve, something we fully realize cannot continue indefinitely, but the board felt if there ever was a justification for using the reserve it was now.

9.0.27 The Board shares the above concerns as expressed by Mr. Eliesen. With regard to his acknowledgement of the need to draw down on the RSRC, the following comment by the Board in H.R. 20 bears repeating:

> In the opinion of the Board, were it not for the rate shock concern, it would have recommended that Hydro move more quickly to targeted net income levels than proposed. In saying this, the Board is mindful that rate shock should be avoided providing Hydro follows a policy in the relatively short term of

> giving appropriate and primary weight to financial soundness principles. For this reason the Board accepts Hydro's commitment to achieve its target level of net income by 1994. The Board, further, would have preferred that Hydro could avoid reliance on the RSRC to avoid rate shock.

9.0.28 With regard to the RSRC, certain parties had referred to this reserve as a "fund". The Board points out that the RSRC is a reserve and not a fund. It represents the accumulated contributions of net income by Hydro's customers in excess of annual appropriations for its SDR. This equity is invested in the assets of the Corporation and represents a major component of internally generated funds which reduces the Corporation's borrowing requirements.

9.0.29 One of the concerns expressed again this year by certain parties to the hearing was the forecast deterioration of the RSRC over the period 1990 to 1993. Table 9-3 shows both the historical and forecast changes in the RSRC.

9.0.30 The Board is most concerned with Hydro's intentions to repeatedly draw down the RSRC rather than increasing its net income sufficiently to cover its SDR, since in the Board's opinion the main purpose of the RSRC is to provide for unforeseen events.

9.0.31 While Hydro testified that it was uncertain as to the appropriate level of the RSRC, the Board is concerned that the reserve is being allowed to deteriorate too rapidly. Accordingly, the Board reiterates its concern that Hydro needs to ensure that net income targets are met and that financial soundness objectives are achieved through appropriately set levels of net income.

9.0.32 With regard to withdrawals from the RSRC, the Board notes that the balance in the reserve at December 31, 1989 was $2,233 million and that it is projected to decline by $825 million or 37 percent over the 4 year period ending December 31, 1993.

TABLE 9-3: RESERVE FOR STABILIZATION OF RATES AND CONTINGENCIES
($ MILLIONS)

Year	Opening Balance	Additions	Withdrawals	Closing Balance
History				
1983	939	287		1,226
1984	1,226	365		1,591
1985	1,591	108		1,699
1986	1,699		45	1,654
1987	1,654		48	1,606
1988	1,606	285		1,891
1989	1,891	342		2,233
1990	2,233		245	1,988
1991	1,988		212	1,776
Projection				
1992	1,776		65	1,711
1993	1,711		303	1,408

Sources: H.R. 20 Report
H.R. 21 - Exhibit 1.1.4 - Final Update

9.0.33 The Board notes that the SDR level of $560 million, as adjusted by the Board to reflect the impact on the SDR of the delay in coming into service of Darlington unit 4, must be met. In order to do so in 1993 and to avoid undue rate shock, it is regrettable but necessary to increase net income to $420 million which would result in a draw down of $140 million from the RSRC for this purpose. In the Board's opinion this amount represents a more prudent withdrawal than that proposed by Hydro. This finding is made, however, on the clear understanding that Hydro will exert every conceivable effort in the balance of this year and throughout the 1993 rate year to cut its costs to the lowest level possible without endangering the safety of the system or the reliability of service to its customers.

9.0.34 The Board finds that Hydro's proposed level of net income at $269 million as updated is inadequate. It further finds and recommends that the SDR must be met in the Board adjusted amount of $560 million which, together with its recommendation that $140 million represents a prudent withdrawal from the RSRC, results in a net income requirement of $420 million for the 1993 rate year.

Recommendation 9.1:

The Board recommends that Hydro set the 1993 level of net income at $420 million in order to meet the Board's adjusted SDR of $560 million in combination with a withdrawal of $140 million from its RSRC. Given the Board's expectation that the Corporation will fully implement the other recommendations in this Report relative to the 1993 revenue requirement, the impact of this recommendation is an increase in the requirement of $151 million.

9.0.35 The Board has some difficulty with regard to the MEA's and IPPSO's recommendation that Hydro move toward a more conservative approach to financial forecasting. Their approach would appear to include a provision for contingencies in the forecasting process which may unduly produce a biased result. The Board is of the view that Hydro should constantly strive to forecast as accurately and realistically as possible and that to build significant contingencies into its revenue requirement would seem contrary to the Minister of Energy's direction that the revenue requirement be as low as possible.

9.0.36 The Board does not agree with the MEA's recommendations relating to Hydro's financial forecasting capability and the need to retain an outside agency to conduct a review at the corporate level. The evidence this year is relatively clear that forecast variations are largely attributable to the underlying planning assumptions rather than the forecasting process itself. Accordingly, the Board will not recommend that such a review be conducted.

9.0.37 The Board has reviewed the key assumptions and cost components underpinning the 1993 revenue requirement to ensure that these are as low as feasible, consistent with the Minister's April 1, 1992 reference. The Board's recommendations affecting the 1993 revenue requirement are contained throughout this Report and are summarized in Table 9-4.

9.0.38 The Board's findings with regard to Hydro's revenue requirement for the 1993 rate year are shown in Table 9-5.

9.0.39 Table 9-6 shows the Condensed Pro Forma Statement of Operations for 1992 and 1993, based on both Hydro's proposals and the Board's findings in this case.

9.0.40 Hydro's assumption is that a 1 percentage point change in rates equates to an $83 million change in the revenue requirement for the 1993 rate year. As shown in Table 9-4 the total impact of the Board's findings is a $59 million reduction in Hydro's revenue requirement. Therefore the Board finds and recommends that an average increase of 7.9 percent is appropriate for 1993.

Recommendation 9.2:

The Board recommends that Hydro increase its electricity rates by an average of 7.9 percent effective January 1, 1993.

TABLE 9-4: IMPACT OF BOARD RECOMMENDATIONS

Particulars	Hydro's Proposal Final Update	Board Recommendations	Impact on Revenue Requirement ($ Millions)
Primary Sales Forecast	143.5 TW.h	Reduced by 0.50%	35
Long-Term Interest Rates	9.5%	8.5%	-36
In-Service Date of Darlington Unit #4	March '93	June '93	-108
OM&A	$2,305 million	Reduced by 5%[1]	-115
Depreciation Expense for Radioactive Waste Disposal	DRC recommendation deferred by Hydro	Reflect DRC recommendation	14 -210
Net Income	$269 million[2]	$420 million [3]	151
Total Impact			-59
Recommended Rate Increase	**8.6%**	**7.9%**	

[1] Excluding any impact from other Board recommendations.
[2] Withdrawal from RSRC $303 ($572-$269) million.
[3] Withdrawal from RSRC $140 ($560-$420) million.

TABLE 9-5: 1993 REVENUE REQUIREMENT AND REVENUE FROM PRIMARY SALES
($ MILLIONS)

Particulars	Original Submission (1)	Final Update (2)	Board Recommendations Adjustments to Update (3)	Board Recommendations Revised Amount (4)
Operation, Maintenance and Administration	2,319	2,305	(127)(a)	2,178
Fuel and Fuel Related	1,233	1,185	18 (b)	1,203
Provincial Government Levies	290	288	—	288
Depreciation	1,538	1,521	(10)(c)	1,511
Interest and Foreign Exchange	3,439	3,488	(126)(d)	3,362
Total Operating Costs	8,818	8,787	(245)	8,542
Net Income	318	269	151(e)	420
Gross Revenue Requirement	9,136	9,056	(94)	8,962
Deduct - Secondary Sales	119	120	—	120
Revenue Requirement	9,017	8,936	(94)	8,842
Primary Sales Adj.	—	—	(35)(f)	35
Revenue To Be Recovered Through 1993 Primary Sales	9,017	8,936	(59)	8,877

Note: Figures may not add due to rounding.

NOTES TO TABLE 9-5
($ MILLIONS)

(1) Ontario Hydro's proposal dated April 1, 1992

(2) Source: Exhibit 1.1.4 - Final Update dated June 30, 1992

(3)	(a)	Darlington #4 (in-service delay)	(12)
		Other	(115)
			(127)
	(b)	Darlington #4 (in-service delay)	18
	(c)	Darlington #4 (in-service delay)	(24)
		Radioactive Waste Removal	14
			(10)
	(d)	Darlington #4 (in-service delay)	(90)
		Long-Term Interest Rates	(36)
			(126)
	(e)	Net income level recommended	420
		Less - Hydro's updated level	269
			151
	(f)	Primary sales reduction per Board	(33)

TABLE 9-6: STATEMENT OF OPERATIONS
CONDENSED PRO FORMA
($ MILLIONS)

	1993		1992	
	Board	**Hydro**	**Board**	**Hydro**
Revenue	8,962	9,056	8,267	8,169
Costs	8,542	8,787	7,935	7,959
Net Income	420	269	332	210
Appropriation for (Withdrawal from)				
Debt Retirement	560	572	499	499
Stabilization of Rates and Contingencies	(140)	(303)	(167)	(289)
Net Income	420	269	332	210

Source: OEB's Reports H.R. 20, H.R. 21

10. PROPOSED RATES

Hydro proposed to increase rates for 1993 by an average of 8.6 percent. Proposed increases to municipal utilities and direct customers average 9.1 percent and the proposed increase in rates to rural customers is 6.6 percent.

10.1 INTRODUCTION

10.1.1 Hydro's evidence indicated that the proposed increases to municipal utilities range from 7.2 percent to 9.5 percent. Increases at the low end of the range were attributed to the benefits to utilities changing to time-of-use ("TOU") rates for 1993. Utilities at the high end of the range of increases tended to be those not on TOU rates and taking delivery of power from Hydro at distribution voltage.

10.1.2 The range of proposed increases for the 107 direct customers is between 8.9 percent and 9.8 percent. In addition to the customary effects of load characteristics and terms of service, the range of increases was described as being broadened by a higher increase for interruptible power compared to firm service, and higher transformation costs for lower voltage deliveries.

10.1.3 The proposed increase in rural rates is 6.6 percent, primarily as a result of a lower than average increase in the rural distribution cost. The lower rural rate increase occurred in spite of a cost allocation change introduced for 1993 in which no credit was allocated to that customer class as a result of the planned withdrawal from the RSRC. Hydro justified this cost allocation change on the grounds that the rural distribution cost function had a negative balance in its accumulated RSRC which would be increased by an RSC credit to that function for 1993.

10.1.4 Issues related to 1993 rates arose in the following areas:

- Rate Design and Cost Allocation
- TOU and Real Time Pricing
- Discount Demand Service
- Rates and Demand Management

10.2 RATE DESIGN AND COST ALLOCATION

10.2.1 The only changes in methodology related to 1993 rates identified by Hydro, other than the real time pricing ("RTP") experiment discussed later in this chapter, was the allocation of the credit to customer classes resulting from the planned withdrawal of funds from the RSC.

10.2.2 Mr. Wade, a private citizen from Ottawa, testified as a residential electrical heating consumer. He reviewed the encouragement for conversion to electric space heating provided by electric utilities including Hydro, and by governments during and after periods of perceived shortages of oil. He stated that consumers who had followed that advice were now facing severe economic penalties in electricity costs, and that there should be a separate rate for electric heating.

10.2.3 Witnesses for AMPCO representing individual industrial consumers testified on the impact of electricity cost increases on their competitiveness and their ability to maintain or increase production and employment in the province. They testified that industrial customers in Ontario paid more for electricity in proportion to rates for residential customers than is the case in some other jurisdictions. AMPCO's witnesses suggested that this could be the result of different cost allocation and rate design methodologies. An AMPCO witness recommended that Hydro's methodology for determining cost recovery from customer classes be reviewed in comparison to methodologies used in other jurisdictions.

10.2.4 AMPCO's witnesses, who recommended that rates to industrial customers be frozen, were divided on the question of subsidies from other customer classes.

10.2.5 IPPSO raised, through interrogatories and cross-examination, issues regarding costing and ratemaking principles as they might apply to specific customer classes. The issues included economic impact, fairness, intergenerational equity and the recovery of costs of new generation capacity.

Positions of the Parties

10.2.6 Board Staff submitted that the proposed change in the allocation of the credit from the RSRC withdrawal to rural rates is reasonable as a temporary change. It noted that the impact of the change is small, and that the majority of the impact would have been reflected in the rural rate assistance in any event.

10.2.7 AMPCO took the position that Hydro's rates should be frozen at the 1992 levels for 1993.

10.2.8 Board Staff commented on AMPCO's evidence and argued that some jurisdictions may subsidize industrial rates through higher residential rates. Board Staff recommended that an investigation of methodologies and possible subsidies in jurisdictions with electricity-intensive competitors to Ontario industries be conducted by the Ministry of Energy.

10.2.9 IPPSO recommended that Hydro report in H.R. 22 on essentially non-technical aspects of rate setting policies for specific customer classes, dealing with rate adjustments for economic policy reasons and the recovery of high costs of new generation capacity among other issues.

10.2.10 Mr. Wade recommended that Hydro establish a separate rate for electrical heating consumption by its direct rural customers, and through the bulk rates, to the customers of municipal utilities. In his view, that rate should be based on the cost of space heating using fossil fuels.

10.2.11 Hydro reviewed the various examinations of its cost allocation methodology and ratemaking principles before this Board. It stated that they have been accepted by the Board in previous hearings, have served their purposes well, continue to be appropriate and should be adhered to in establishing customer rates.

10.2.12 Hydro expressed no specific position on the recommended price freeze by AMPCO or the electric heating rate proposed by Mr. Wade. It categorized the IPPSO arguments regarding inter-class pricing considerations as speculative and rejected the recommendation for a study of general ratemaking policies for H.R. 22. Hydro took no position on Board Staff's recommendation that the Ministry of Energy conduct an analysis of cost allocation and rate design methodologies in other jurisdictions.

Board Findings

10.2.13 The Board agrees with Board Staff that any review of rate setting practices in other jurisdictions related to non-regulatory matters such as industrial development policies, or for that matter "social engineering" considerations, should be conducted under the auspices of the appropriate government ministry. The Board notes that the subject of alleged unfair subsidies to some industrial customers of Hydro Quebec is being examined in the United States in the context of fair trade practices. Given that the

Board does not formulate energy policy, it will not express an opinion on the suggestion by AMPCO of investigating unfair subsidies to industrial consumers in other jurisdictions.

10.3 TIME OF USE AND REAL TIME PRICING

10.3.1 TOU rates have been in place to municipal utilities since 1989. Hydro's evidence indicates that 98 percent of the load of the 311 municipal utilities and two distribution companies will be billed on TOU rates by Hydro in 1992 and 1993. The number of utilities assumed to be on TOU billing in 1993 increases by 10 to 231.

10.3.2 Hydro offers TOU rates on an optional basis to direct customers on the rural system with loads over 500 KW. Some 51 utilities offer TOU rates to customers smaller than 5 000 KW down to a range of 1 000 KW to 2 500 KW. Only North York Hydro and Toronto Hydro have introduced TOU rates to their residential customers.

10.3.3 Hydro has introduced an experimental use of real time pricing to some industrial customers as an extension of TOU pricing. Participating customers are notified by 3:00 p.m. each day of the expected hourly electricity costs based on system marginal costs for the next day. Hydro is one of a few utilities in North America gaining experience with RTP on an experimental basis to determine the logistics and costs of such a rate, the reaction of customers to the concept and the potential savings to the system from the rate.

10.3.4 Hydro testified that all direct industrial customers were notified of the experiment in March 1992, and there were regional meetings and follow-up meetings with individual customers. Hydro received 19 applications to participate by the application deadline of May 15, 1992 and expects additional applications by August 31, 1992. An initial phase of the experiment began on June 1, 1992 with four customers to examine the practical details of communications, metering and billing under RTP rates. On January 1, 1993 Hydro expects to commence a three-year second phase of the experiment with a cross-section sample of 20 direct customers who will enter into one-year arrangements to be supplied under the RTP program.

10.3.5 Hydro testified that the RTP rules will include an hour-by-hour KWh charge based on the system marginal costs, plus a premium designed to cover the fixed costs to the direct customer class and avoid an impact on the costs to non-participating customers. The rates are designed with the expectation of recovering the same revenue as TOU rates, although the actual charges will be significantly different, with much wider differentials between peak and off-peak periods. The RTP rates will be adjusted to reflect actual experience in the second and third years of the experiment.

Positions of the Parties

10.3.6 Board Staff submitted that the lack of availability of TOU rates to all direct and utility consumers creates a lost major demand management opportunity and shifts a cost burden to non-TOU customers. It recommended that Hydro accelerate implementation of TOU rates for all customers in the power district, and assist municipal utilities to do the same.

10.3.7 Board Staff was supportive of the RTP experiment for the demand management potential, and as a means of encouraging customers to manage their loads in response to changing marginal electricity costs. RTP rates also provide some industrial customers with the increased flexibility they require. Board Staff stated, however, that the Board must be assured that RTP does not provide an unfair advantage to the direct customer class to which the experiment is confined.

10.3.8 Two concerns with the RTP experiment were expressed by Board Staff. The increased differentials in peak and off-peak premiums to recover fixed costs have the potential for under-recovery of those costs if load shifting exceeds the forecast levels used in establishing the RTP rates for a particular year. The second concern is that there will be a net income loss if Hydro underestimates its marginal costs. It recommended that Hydro report to the Board on an on-going basis of the financial impacts of the RTP experiment.

10.3.9 AMPCO noted testimony by Hydro that not all industrial customers are capable of participating in an RTP pricing option. AMPCO submitted that Hydro should identify the numbers of non-participants and the reasons for that status. It recommended that Hydro develop, in conjunction with the industrial sector, a broader range of pricing options which reflect system costs.

10.3.10 The MEA expressed conditional support for the RTP experiment. It recommended that Hydro pay particular attention to the reliability and predictability of the load shifting by participants to provide system benefits.

10.3.11 Hydro submitted that its efforts to extend TOU pricing to all customers were appropriate. Limitations include adverse economics for some customers and problems with the availability of TOU meters for smaller customers. It noted that the number of utilities offering TOU rates has increased from 15 in 1990 to 34 in 1991 and 51 in 1992.

10.3.12 With regard to the concerns raised about the RTP experiment, Hydro stressed the preliminary status of the development, acknowledged the concerns and stated it would respond to them as the experiment progressed. It also committed to keeping the Board fully informed of developments in future hearings.

Board Findings

10.3.13 The Board finds that Hydro's efforts to extend TOU pricing to all customers and the progress being made are acceptable. Also the Board shares the interest and general support shown by parties for the RTP experiment. The Board expects Hydro to fulfil its commitment to take account of the concerns raised during the hearing, and to keep the Board fully advised as the experiment proceeds.

10.3.14 However, the Board has some concerns about the RTP experiment, in addition to those raised by parties. Hydro should treat early results for load shifting with some caution, given that the present economic conditions likely provide manufacturers operating at less than full capacity with more flexibility to adjust their production scheduling. Since participation in the experiment is limited to 20 direct customers, Hydro should be alert to deal with any significant distortion of the relative competitiveness, due to electricity costs, of those participants and non-participating customers.

10.4 DISCOUNT DEMAND SERVICE

10.4.1 In 1991 Hydro introduced a new form of interruptible rate, Discount Demand Service ("DDS"), to counter the trend for interruptible customers to give notice of conversion to firm service. Pricing under DDS was based on the avoided cost of generation by a combustion turbine unit, with Hydro retaining 10 percent of the avoided cost to recover administrative costs and provide a financial benefit to other customers.

10.4.2 When DDS was introduced, interruptible contracts totalled 1 065 MW with 345 MW of the total under notice to convert to firm service. At the time of the hearing, DDS volumes were 1 020 MW, of which 58 MW were outstanding conversions to firm service, with seven new DDS customers.

10.4.3 For 1992 the avoided costs on which the DDS discounts are based did not increase. In order to maintain the 1992 discounts at the 1991 levels, Hydro decreased its retention of a portion of the savings from 10 percent to 9 percent.

10.4.4 Hydro testified that in order not to reduce the attractiveness of DDS by lowering the discounts for 1993, it would retain only 5 percent of the avoided cost, subsequently revised to about 7 percent.

Positions of the Parties

10.4.5 The MEA argued that the proposed increase in the avoided cost provided to DDS customers is to reduce the impact of overall rate increases to those customers at the expense of all other customers. That action, the MEA stated, is unfair and unwarranted by market conditions given that interruptions will diminish as surplus capacity on Hydro's system grows. The MEA recommended that the DDS discount should not exceed the 1992 value calculated at 90 percent of the avoided cost.

10.4.6 Hydro pointed out that the DDS rebate varies with the number of hours of interruption and is thus self-adjusting. It noted that there still remain 58 MW of outstanding notices of conversion to firm service. Hydro submitted that the proposed increase to the DDS discount is necessary to demonstrate its commitment to the interruptible program.

Board Findings

10.4.7 The Board agrees with the MEA that the proposed increase in the DDS rebates may not be required to obtain the desired participation in the program at this time. The Board notes, however, that the impact of the recommendation of the MEA is small. In light of the present emphasis on energy management activities, of which the DDS program is one, the Board accepts the argument of Hydro that the increased rebates are necessary to demonstrate Hydro's commitment to the program and is not prepared to risk the loss of the program's momentum that might result from the MEA recommendation.

10.4.8 The Board finds, therefore, that the DDS rebate levels as proposed by Hydro are acceptable for the 1993 rate year.

10.5 RATES AND DEMAND MANAGEMENT

Positions of the Parties

10.5.1 CAESCO argued that rate structures encouraging the wise use of electricity should also be viewed as a demand management tool. Rates could, in CAESCO's view, be developed in conjunction with performance-based demand management programs to provide program participants with more favourable rates to achieve enhanced results. CAESCO recommended that Hydro's rate structure be used as a demand management tool.

10.5.2 Hydro acknowledged that rates play a role in demand management programs. It submitted that the complete range of ratemaking principles must be taken into account when setting rates. Rate structures designed solely to encourage load shifting and conservation are counter to good ratemaking principles. Hydro stated its intention to continue to consider energy management, with all other ratemaking objectives, in setting rates.

Board Findings

10.5.3 For purposes of 1993 rates, the Board agrees with Hydro and therefore does not accept CAESCO's submissions in this regard.

11. EXECUTIVE COMPENSATION

The letter of reference from the Minister specifically instructed the Board to review the 1992 compensation paid to all Hydro's senior executives including: the Chair/Chief Executive Officer, the President and all Vice-Presidents. The Minister indicated that he expected the Board's review to include a comparison of these compensation levels with those paid by other publicly and privately owned utilities in North America and to those paid to executives with equivalent levels of responsibility in the private sector.

11.0.1 The total 1992 salary budget, excluding benefits, for the Senior Management Group ("SMG") which includes those positions outlined in the reference, is forecast to be about $2.8 million broken down as follows: Chair/Chief Executive Officer $260,000; President $325,000; four Senior Vice-Presidents $230,000 (average); and seven Vice-Presidents $170,000 (average).

11.0.2 The title Senior Vice-President was eliminated from Hydro's organizational chart just before the hearing began but after the evidence had been filed. In order to prevent confusion in citing the evidence (all of which refers to the title Senior Vice-President) and because the re-organization did not affect the salaries of the individuals involved or the Ministers' direction, the Board will continue to refer to the title Senior Vice-President.

11.0.3 Hydro's salary policy in regard to its SMG is based on the following two principles:

- The base salaries should be competitive with those paid to other executives employed by companies with annual revenues in excess of $400 million. Hay Management Consultants ("Hay"), which provides Hydro with advice on executive compensation, prepares the list of these companies annually.

- The salaries should also recognize that senior positions in the public sector are traditionally paid less than comparable positions in the private sector.

11.0.4 Hay has developed a means of computing an executive's salary which is based on what it calls Hay Control Points. The allocation of these control points to a particular position allows a salary comparison of that position with other positions both inside and outside the organization. For example, in regard to the position of Hydro's Chair/CEO, it is currently rated by Hay at 3,227 Hay Control Points. This provides a reference to compare salaries of executives in different companies with varying responsibilities but similar titles.

11.0.5 In order to achieve the second salary policy goal as set out above, Hydro sets its salary reference line for each position in the group at 75 percent of the salary dictated by the number of Hay Control Points assigned to that position. Hydro then determines a range for each position around that reference line which runs from a low of 80 percent of the reference line to a high of 120 percent. For 1991, that range is set out in Table 11-1 for each SMG position. As well, that table also includes the actual base salary and benefits for each position.

11.0.6 There are no automatic salary increases for this group but all the salaries are reviewed annually and adjustments within the range are made for performance. This policy is tempered in regard to Hydro's Chair/CEO by the application of an Order-in-Council dated October 23, 1991, which pegs the salary and benefits for that position at 80 percent of the salary and benefits of Hydro's President. The effect of the Order-in-Council is that the base salary of Hydro's Chair/CEO is currently about 75 percent of $343,400 which is the lower end of the salary range for that position.

TABLE 11-1: SALARY AND BENEFITS (AS OF MAY 1992)

		Chair and CEO	President	Senior Vice President Average	Vice President Average
Base Salary Policy Range:	80%	$343,400	$269,800	$172,800	$142,800
	100%	429,300	337,200	216,000	178,500
	120%	515,200	404,600	259,200	214,200
Actual Cash Compensation		260,000	325,000	225,500	171,100
Employee Benefits		44,100	54,700	38,500	29,500
Perquisites		20,500	20,500	15,600	15,200
Time Off With Pay		23,000	28,700	19,900	15,100
Total Non-Cash		87,600	103,900	74,000	59,800
Total Compensation Package		$347,600	$428,900	$299,500	$230,900

Source: Exhibit 11.4.1 (i) revised May 14, 1992
Exhibit 11.1.0

11.0.7 The Minister's direction to the Board that it examine the level of Hydro's executive salaries, resulted in the issue being meticulously scrutinized by an impressive array of compensation experts.

11.0.8 Hydro called several witnesses in regard to the compensation evidence for its Senior Management Group including two from Hay who undertook a specific study of the salaries in question. As well, Board Staff commissioned a separate report from Sibson & Company ("Sibson"). Table 11-2 outlines the results of the salary comparisons as undertaken by both Hay and Sibson pursuant to the Minister's specific direction that the salaries be compared to certain outside reference communities as outlined in the reference letter appearing in the Preface of this Report.

11.0.9 The Hay study concluded that the total compensation package for the SMG was well below the Minister's comparison communities. With respect to the Chair/CEO, the difference is between $347,600 (which is his total salary and benefits package) and $800,000 paid to his counterpart in other Canadian public utilities and about $1.2 million paid to his counterpart in the Canadian private sector or by U.S. electrical utilities.

TABLE 11-2: COMPENSATION PACKAGE - ONTARIO HYDRO RELATIVE TO AVERAGE

	CANADIAN PRIVATE SECTOR	CANADIAN PUBLIC UTILITIES	U.S. ELECTRICAL UTILITIES
HAY STUDY			
CEO	-72%	-56%	-69%
President	-40%	-29%	-47%
Senior V.P.	-20%	-16%	-31%
V.P.	-21%	-16%	-33%
SIBSON STUDY			
CEO	-57%	-28%	-72%
President	-20%	NA	-50%
Senior V.P.	-9%	+25%	-36%
V.P.	-4%	+10%	-11%

Source: Ex. 11.1.2, revised May 5, 1992, p. 14.
Ex. 11.2.1., Tables 1-4

11.0.10 Board Staff called two witnesses from Sibson, a firm specializing in human resources consulting. It currently provides services to more than half of the top 100 companies in Canada. Its witnesses agreed with Hay that there was a significant discrepancy between the salaries for Hydro's top two positions and the Minister's comparison groups but disagreed with the Hay conclusions that there was also a significant discrepancy between the other executive positions and the comparator groups.

11.0.11 The Board also heard from Dr. Charles Fay, an associate professor at Rutgers University in New Jersey. Amongst other subjects, Dr. Fay lectures on performance appraisal and compensation strategy at that university's Institute of Management and Labour Relations. He has just completed a research project involving compensation paid to outside director's in 225 large U.S. corporations and is currently completing an analysis of data on executive pay in those same corporations. He was appointed by U.S. President Bush to the Federal Salary Council and is chair of the research committee of American Compensation Association. He was called as a witness by Hydro.

11.0.12 Dr. Fay's conclusions in regard to Hydro's executive salary levels agreed with those of Hay. He testified that Hydro's policy of setting the salary limit for its Chair/CEO at 75 percent of the comparable market was too conservative as it placed that position significantly below the comparison groups.

11.0.13 As well, he added that the lack of long-term and short-term incentives placed Hydro at a disadvantage with respect to the reference communities for all positions in the Senior Management Group but he testified that it was not clear how such incentives should be addressed by Hydro's Board of Directors if that board felt they were appropriate at all.

11.0.14 He pointed out that it was typical for organizations the size of Ontario Hydro to have a compensation package including short-term incentives which should be in addition to the base salary keeping in mind that the function of such pay is to incent and "putting a portion of below market base pay at risk is not likely to incent anyone."

11.0.15 Any incentives, he said, should be based on performance which should support Ontario Hydro's documented organizational strategy which Dr. Fay testified was as good at Hydro as any he had seen in other major private or public organizations. "I think in an organization like Ontario Hydro, which has a number of stakeholders and not simply a bottom line and shareholders to look to, it is important to have a more extensive . . . set of both organizational and individual goals."

11.0.16 On the question of incentives, the witnesses on behalf of Sibson went further than Dr. Fay and concluded that Hydro should be focusing on implementing some kind of short-term or long-term incentive plan to bring it into line with the practice of other utilities and private sector companies.

11.0.17 The study by Hay did not comment on the advisability of implementing pay for performance or incentives as it was beyond their terms of reference but their evidence did point out that the vast majority of the companies surveyed in all three of the Minister's comparisons groups provide some form of short-term incentives.

Positions of the Parties

11.0.18 Most of the intervenors did not comment on this portion of the evidence and of those who did, none argued that the salaries were excessive. Board Staff, the MEA and AMPCO submitted that the salaries were comparable to the reference communities and therefore appropriate. However the arguments by the MEA and Board Staff submitted that the Board should recommend some form of executive incentive plan and that studies should be undertaken to determine how such incentives could best be implemented.

11.0.19 The MEA pointed out that it had recommended such a practice in past hearings and, like Board Staff, the MEA pointed out that many of the expert witnesses who gave testimony on this subject also recommended that incentives should be incorporated into the salary policy for Hydro's SMG.

Board Findings

11.0.20 In regard to the question of salary levels, the Board points out that there was no evidence that any of the salaries which the Minister directed the Board to examine was excessive. In particular, the Board finds that the salaries of the Chair/CEO and the President are below those of the comparison groups which the Minister directed the Board to examine.

11.0.21 The Board notes Dr. Fay's evidence and the arguments of some of the parties on the advisability of Hydro instituting some form of pay for performance or incentive compensation for senior executives. It is the Board's opinion that pay for performance should be determined by how well the executives meet the Corporation's priority goals. The Board therefore expects that, should Hydro's Board of Directors contemplate introducing pay for performance for senior executives, in the present circumstances of Hydro, the major criterion of performance should be the executive's success in reducing Hydro's costs and rates.

12. GENERAL POLICY

12.1 INTRODUCTION

12.1.1 Mr. Eliesen, Chair/CEO appeared on the final day of the hearing to present an overview of accomplishments in the past year and to outline current priorities of the Corporation. Mr. Eliesen was accompanied by Mr. Burdette, Senior Vice-President, Finance and Services.

12.1.2 Mr. Eliesen drew attention to four areas of activity, namely senior management reorganization, the DSP update, labour management relations and new cost control initiatives.

12.1.3 A new corporate alignment, undertaken to break with what Mr. Eliesen called the hierarchical structure of Hydro, put strategic planning, human resources and all other specialized staff functions under Mr. Eliesen and all operations under Hydro's President, Mr. Holt.

12.1.4 Mr. Eliesen stated that when he took office, Hydro's December 1989 DSP was under review and that the update resulting from this review increased energy management and NUG targets. It also incorporated fuel switching and life extension of some present generating plants. These initiatives indicated a possible surplus of 4 800 MW by the year 2000 and would have the result of deferring new conventional supply options to the year 2009.

12.1.5 Mr. Eliesen stated that on taking over, he felt that negative adversarial labour management relations should be avoided. He claimed that this approach helped bring about a two year contract with CUPE for moderate wage increases and facilitated management's decision to speed up the process of certifying the Society, which announced it would not seek a salary increase for the first year of a contract following possible certification.

12.1.6 On cost control, Mr. Eliesen stated that the corporate budget process for 1992 cut $127 million from final branch submissions on OM&A and reduced capital spending by $220 million. For 1993 there were further substantial cuts in both OM&A and capital followed by more cuts in response to the prolongation of the recession. He also pointed out that fuel costs had been reduced by the advantageous renegotiation of the western Canadian coal contracts.

12.1.7 Mr. Eliesen then went on to list three current priorities of the Corporation, namely cost control and productivity improvements, greater priority for energy management and the improvement of the operating performance of the Corporation's generation and transmission facilities. This latter priority singled out Hydro's commitment to Bruce A rehabilitation, life extension of fossil and hydro plants, getting Darlington operations on track and major spending on the transmission system.

12.1.8 Mr. Eliesen's rationale for the proposed 8.6 percent rate increase highlighted the troubles at Darlington which he indicated accounted for about 75 percent of that increase. He stated it was unfortunate that the Darlington delays likely resulted in a bunching of large units coming into service over an unusually short period which put additional upward pressure on rates.

GENERAL POLICY ISSUES

12.1.9 In the view of the Board the general policy issues which are significant for this hearing are:

- Concern by intervenors that Hydro's recent rate increases are well above inflation. This concern led to the need to try to find out if Hydro is doing all it can to contain costs and if the Corporation can surmount its present difficulties without a major change in its practices; and
- Changes to the Board's hearing process as advocated by a majority of intervenors.

12.1.10 The Board feels that those two major issues are important in and of themselves and are also linked. In short, the Board is of the view that intervenors advocating changes in the review process want increased scrutiny of Hydro because of rate increases which are well above inflation.

12.2 RATE INCREASE AND COST CONTAINMENT

12.2.1 Hydro itself noted an unprecedented level of interest by intervenors in the general policy area with seven of the eleven active intervenors submitting final argument making recommendations or comments in that area.

12.2.2 Intervenors spent much time and attention trying to ascertain whether Hydro is doing all it can to contain capital costs and expenses and keep prices down. Intervenors noted that private businesses and private individuals in recessionary circumstances have no choice but to do just that in order to survive.

12.2.3 Intervenors addressed the adequacy of Hydro's efforts to improve productivity, the effectiveness of its cost control and expenditure reductions, its handling of labour matters and how it is dealing with the delays and difficulties of Darlington. Energy Probe's introduction of wheeling and third party access is considered by the Board to be related to the general policy issue of containing costs because these processes attempt, to a degree, to introduce some competitive element into the electricity market and so expose Hydro to some limited market discipline.

12.2.4 In terms of general policy, the Board feels that intervenors contributed three types of suggestions and recommendations:

- Proposals for across the board cuts in certain Hydro budgets. Examples include, AMPCO which advocated that Hydro freeze rates by reducing OM&A expenses by 30 percent; Board Staff which urged reducing OM&A expenses by $41 million; the MEA and IPPSO both of which would cut OM&A expenses by 5 percent; and Energy Probe's proposal to enhance productivity by staff cuts and salary rollbacks;

- Proposals for changes in Hydro procedures such as budgets and cost controls. Examples are IPPSO's recommendation that Hydro establish the most stringent cost cutting measures, for example, establishing immovable budget limits for the branches; Board Staff's suggestion that all programs be reviewed by senior management to set branch budgets as low as possible without jeopardizing corporate objectives; and the MEA proposal that Hydro develop indicators to be used in establishing results floors.

- Proposals which call for outside assessment of Hydro's expenditures, control processes and results. Examples are AMPCO's recommendation that the Ontario Government appoint an independent external auditor to review Hydro's OM&A costs and recommend cuts to this budget over the next three years; and the MEA's recommendations for the appointment of an external value-for-money auditor and a review by an outside agency of Hydro's financial forecasting at the corporate level.

12.2.5 Hydro's response to these intervenors was that, for example, it had taken action to control its costs including tightened resource ceilings, had asked branches to identify the impact of a further 5 percent cut on ceilings and pointed to further cuts mid-year through 1992. The effects, Hydro stated, are OM&A expense reductions for 1992 of $127 million plus a further $32 million and $145 million for 1993.

12.2.6 In response to the MEA's criticism that Hydro has had a mammoth increase in its budgets in the 1990s to date and its assumption that future Hydro cost controls will be inadequate, Hydro argued that these past increases are better described as unavoidable, unbudgeted increases. Examples of these given by Hydro were additional pension costs resulting from a court decision, increased CANDU Owners Group funding due to federal and provincial government negotiations and funding to restore nuclear performance.

12.2.7 Similarly, Hydro stated that it is not the case as argued by Board Staff that it is unconcerned about rising staff levels. Hydro's argument is that it showed ample evidence to justify an increase in staff levels needed for restoration projects in nuclear and transmission, new generation supply and energy management activities.

12.2.8 Board Staff criticized the fact that Hydro still has no timetable for narrowing the total compensation differential between the Corporation and its comparable external communities. Hydro argued that it is trying to do this in the long term.

12.2.9 Hydro also argued that both the MEA and AMPCO provided a minimal rationale to support their call for various types of independent external audits. Hydro asserted that it already has a comprehensive audit program and it also notes the review recently undertaken by its external consultants, Cresap. Hydro concluded that these activities combined with the annual review by this Board, by the EAB and by select committees, provide adequate external examination of the Corporation.

12.2.10 Elsewhere in this Report, the Board concluded that there is clear evidence that Hydro has, to an extent, lost the confidence of many intervenor groups in regard to its ability to contain costs and sell power at reasonable rates. This unease, in the view of the Board, is well articulated by those who assert that what they describe as the present financial crisis of Hydro has arisen not merely from the present recession, but from past policies and actions dating back to inadequate rate increases in the 1980s, when Hydro's policy was to limit rate increases to the rate of inflation.

12.2.11 A further conclusion of the Board on this issue is that Hydro's recent and present upward rate pressures are due to factors which predate this hearing by many years. Some of these factors, stated Hydro, were unavoidable and unbudgeted.

12.2.12 The Board distinguishes these unavoidable factors from other factors influencing Hydro's upward rate pattern which appear to the Board to be persistent as opposed to unique. Important examples of such persistent factors are compensation above that paid to comparable groups and staffing levels which seem unresponsive to declines in demand.

12.2.13 Hydro has pointed to the fact that one unavoidable factor, namely Darlington costs, account for 6.7 percent of the 8.6 percent proposed rate increase. The Board concludes that had Hydro in past years been more successful in dealing with the persistent factors of high compensation and staff levels, for example, it would have better coped with the Darlington costs.

12.2.14 The Board accepts that Hydro management cannot decide on levels of compensation or staffing levels in a unilateral manner. In the Board's view, Hydro management must in turn accept that in these circumstances it has a responsibility to initiate more vigorous action in this regard than it has to date.

12.2.15 The Board acknowledges that this state of affairs has taken a long time to evolve and, given the realities of collective bargaining, will not be turned around quickly. The Board hopes, however, that the non-adversarial approach to labour matters stressed by Mr. Eliesen will be helpful in bringing about such a resolution. The Board will expect Hydro to file evidence in H.R. 22 on the corrective action it has taken to narrow differentials and reduce staffing levels.

12.3 ADEQUACY OF THE BOARD'S ANNUAL REVIEW OF HYDRO'S RATES

12.3.1 In H.R. 19, the Board was of the view that the time had come for a review of the hearing process and favoured a broad consideration of alternative approaches which would result in a new review process.

12.3.2 In this hearing, six intervenors, namely the MEA, AMPCO, IPPSO, CAESCO, Energy Probe and Board Staff made recommendations and suggestions on changes to the hearing process. These interventions fell into two broad categories:

- those who wished to initiate some kind of review with the object of making major changes in the hearing process; and
- those who wished to retain the present system but improve it in certain respects or supplement it by so-called mini-hearings on specialized issues.

12.3.3 The MEA fell into the first category. It recommended that a major review be initiated by the Ontario Government of Section 37 of the OEB Act and of the public hearing process. It pointed out that it urged such a review, admittedly for different reasons, in H.R. 20. It stated that there has however, been a reinforcement of that need for review because of its conclusions on what it believes is the improper attribution of a major part of the 1993 rate increase to Darlington. The MEA stated it does not believe that to date, the Darlington costs have received adequate public scrutiny.

12.3.4 IPPSO and Board Staff also recommended a structural change in the hearing process which, much like the MEA's proposal above, stems from their approach to a specific matter. In this case, that matter is the debate, discussed elsewhere in this Report, on whether to rehabilitate Bruce A or mothball it. These intervenors noted that in the present process, Hydro's capital expenditures are neither reviewed nor tested in any public process on an on-going basis. It was observed that the EAB reviews long-term plans and that this Board reviews the effect of capital expenditures in the rate year only. IPPSO thus suggested a continuation of H.R. 21 on the Bruce decision starting in the fall of 1992.

12.3.5 Board Staff also recommended that there should be regular public reviews of all major capital expenditures undertaken by Hydro. Such a proposal is a major change in the scope of the present hearing process. Other than using the terms "external review" and "in a public forum", Board Staff was silent as to who might initiate or conduct such a review.

12.3.6 AMPCO was the third intervenor recommending major changes in the hearing process. In brief, it proposed replacing the present hearings which are held each year on rates by two different types of hearing which would operate in alternate years. 1993 would see the first of the new type hearings which would be on the same lines as at present with the benefit of more time and on a further recommendation of AMPCO, with the addition of a review of Hydro's major capital expenditures. This latter additional recommendation is, as we have seen, in line with Board Staff's.

12.3.7 In AMPCO's proposal, 1994 would see the second of the new type hearings in this case designed to review the impact of organizational performance and staff remuneration within Hydro. This review would include the effect of non-compensation issues such as job security and the internal reassignment policies of Hydro. AMPCO suggested that the Ontario Government set up a committee with members drawn from the Board, Ministry of Energy, Hydro and interested intervenors to produce formal recommendations for the new alternate year hearing process.

12.3.8 CAESCO also recommended that the Ontario Government review the public hearing process or alternately should ask the Board itself to initiate a hearing to evaluate the process and make recommendations.

12.3.9 Board Staff recommended that the Minister of Energy refer the issues of wheeling and third party access to this Board or some other public forum to determine if such a system or systems would be technically feasible, economically viable and equally beneficial to all ratepayers.

12.3.10 IPPSO asked the Board to set up some process to form a joint committee with Hydro, Board Staff and intervenors to improve the accessibility of updated and consistent information for use in H.R. 22.

12.3.11 Hydro did not argue that the status quo was incapable of improvement but the Board, it said, should recognize that it had a remedy in its own hands, namely, it could exercise vigilance to ensure relevance of the issues to the rate review and to the public interest. On the whole however, Hydro had little quarrel with the present arrangements except to comment that intervenor funding had resulted, in its view, in an increase in the quantity of the material at the hearing. This led, in Hydro's opinion, to intervenors presenting evidence with a tenuous connection with the rate review process at the cost of prolonging the hearing and making it ineffective.

12.3.12 The Board has thus summarized the views received on this matter on the adequacy of the review process. The Board directs the attention of the Minister of Energy to these views which will no doubt serve as additional background prior to issuance of a reference to this Board for H.R. 22.

12.3.13 In regard to the 1993 capital expenditures which are referred to in Chapter 6, the Board is of the opinion that its own process can effect such a review under the normal terms of the Minister's reference. Traditionally the Board has not heard extensive evidence in regard to such expenditures because it has concentrated on matters dealing more directly with rates. If the Board were to undertake a review of capital expenditures, the normal examination of certain other matters might have to be relaxed.

12.3.14 The Board therefore concludes that the Minister may wish to effect a more thorough review than normal of Hydro's capital expenditures not related to system expansion as part of the usual hearing on Hydro's 1994 rates. In order to undertake this task within the tight time constraints of the normal hearing process, the Board would have to reduce the time it spends on reviewing less important issues in H.R. 22.

13. COSTS AND COMPLETION OF THE PROCEEDINGS

13.1 COSTS

13.1.1 The Board bases its decision in regard to costs on its perceptions of the amount of assistance which each intervenor provided in the presentation of evidence, the questioning of witnesses and the submission of argument. In more specific terms, the Board has evaluated each intervention in which costs were requested and has quantified the degree to which that intervenor has participated in a responsible manner in the hearing process.

13.1.2 In each case, the percentage award found by the Board is for that intervenor's reasonably incurred costs as determined by the Board's guidelines in that regard. These guidelines also require the intervenor to file with the Board a summary of costs requested in the forms contained in Appendix C hereto, together with all necessary and required details to substantiate the requested amount.

13.1.3 Before dealing with each specific request, the Board will deal with a generic request by the MEA that the Board Order include a provision for interest on the amount of the cost award because of the Board's delays in finalizing the amounts. The Board is aware of the delays involved and has implemented a new process to speed up its cost awards. Therefore the Board does not consider the awarding of interest to be an appropriate remedy.

CAESCO

13.1.4 In its request for costs, CAESCO indicated that it relied on its members to provide assistance and support to counsel and that it would not seek costs for any expert witnesses. It argued that its participation was responsible and that it made a number of important and serious recommendations in argument in the areas of energy management, economic and load forecasting, OM&A and borrowing.

13.1.5 Hydro argued that CAESCO did not make any use of the interrogatory process and that its counsel spent an inordinate amount of time attending the hearing and asking questions in cross-examination which could have been asked more cost effectively through interrogatories. Hydro argued that the intervention was of little assistance to the Board.

Board Findings

13.1.6 CAESCO has not participated in prior Hydro hearings and for the most part, its participation in this hearing was relegated to a watching brief.

13.1.7 In the Board's opinion CAESCO should have restricted its appearance to the energy management portion of the hearing which is the part which most closely affects its members and where CAESCO can be of most assistance to the Board. For CAESCO to broaden its attention to other parts of the hearing as it did in this proceeding resulted, in the Board's opinion, in duplication of effort and was not helpful to the Board.

13.1.8 For these reasons the Board will permit CAESCO 100 percent of those reasonably incurred costs directly associated with its intervention in the area of energy management. The Board therefore directs CAESCO to confine its cost filing to the issue of energy management.

The MEA

13.1.9 The MEA requested the Board to award it 100 percent of its costs and argued that it had intervened responsibly and that it does not represent any private interest. As well, it argued that it depends on internal staff for professional assistance rather than employing external experts with the result that a good portion of its costs are not recoverable in a cost award.

13.1.10 Hydro made no comment on the MEA's request for costs other than to object to the issue of interest on the award.

Board Findings

13.1.11 The Board agrees that the MEA intervened responsibly and it therefore awards it 100 percent of its reasonably incurred costs.

ENERGY PROBE

13.1.12 Energy Probe submitted that it will suffer if it is not awarded 100 percent of its reasonably incurred costs because it ran a deficit in 1991 and is still in debt. It argued that it had restricted its participation in these proceedings to those areas in which it believed that it had expertise and where its members have expressed interest. It claimed that it had contributed to the hearing particularly in the area of third party access.

13.1.13 In its request for costs, Energy Probe cited its extensive additional burden in answering the MEA's motion to exclude its evidence on third party access and cited its lengthy history of interventions and interest in energy matters.

13.1.14 Hydro argued that Energy Probe's "attention to ... quality and originality" in its final argument was only demonstrated by the frequency with which it introduced new evidence instead of relying on the evidence presented at the proceedings.

Board Findings

13.1.15 The Board is aware of Energy Probe's contribution to Hydro rate hearings. In this hearing, its evidence on third party access presented a new outlook on what might, in the future, be an important subject. However, the Board is of the opinion that in other areas, Energy Probe did not prove as helpful and its argument was not always based on the evidence.

13.1.16 The Board will therefore award Energy Probe 100 percent of its reasonably incurred costs in regard to the evidence concerning third party access but only 80 percent of its reasonably incurred costs in other areas. In regard to its disbursements, the Board will award 100 percent of the total of those which are found to have been reasonably incurred.

ADMIC

13.1.17 ADMIC submitted that it brought before the Board an area of energy management which would not have been examined had it not been for its intervention. It therefore requested 100 percent of its reasonably incurred costs.

13.1.18 Hydro pointed out that ADMIC concentrated too much on detail which was inappropriate for an annual rate hearing and which was of no assistance to the Board.

Board Findings

13.1.19 The Board, at least in part, agrees with Hydro that ADMIC became sidetracked and spent too much time on minute detail which was of limited or no use to the Board. On the other hand, ADMIC did emphasize an important area of energy management where extensive savings may be gained. Its intervention may thus serve as an impetus for further consideration of this area.

13.1.20 The Board finds that ADMIC should be paid 100 percent of its legal costs and its disbursements but only 80 percent of the remainder of its reasonably incurred costs.

The CEG

13.1.21 In its request for costs, the CEG submitted that it had attempted to husband its resources to concentrate on demand management. It requested 100 percent of its reasonably incurred costs and outlined the effort it had undertaken in regard to its direct evidence and its responses to Hydro's interrogatories on that evidence.

13.1.22 Hydro pointed out that the CEG disregarded the Board's deadlines for the filing its direct evidence and its interrogatories on Hydro's evidence and that this had created particular difficulties for Hydro's energy management panel.

Board Findings

13.1.23 The Board did find the CEG's direct evidence helpful and is prepared to award 100 percent of the reasonably incurred costs in that regard. However, the CEG was well aware of the time constraints on the Board and the participants in the hearing. In the Board's view, its disregard of these deadlines was less than helpful. As a result of the late filings therefore, the CEG is awarded only 80 percent of its reasonably incurred costs in other areas. However, it is awarded 100 percent of its reasonably incurred disbursements.

IPPSO

13.1.24 IPPSO submitted that it was deserving of 100 percent of its reasonably incurred costs because it had contributed substantially to the hearing by introducing direct evidence in regard to environmental dispatch and that its assistance to the Board was efficient and did not cause delays.

13.1.25 Hydro pointed out that IPPSO provided important evidence in regard to NUGs, environmental dispatch and Bruce A expenditures. However, it argued that Mr. Passmore's evidence was of no assistance because it was based on incorrect assumptions and the evidence in regard to expenses involving a U.S. nuclear station was irrelevant. It also argued that other evidence was filed late and was of only marginal use in the hearing.

Board Findings

13.1.26 As Hydro pointed out, IPPSO was given ample warning that if the Board found that its evidence was irrelevant, it might not allow its costs to be recovered by way of a cost award. IPPSO was also aware that there is a moratorium on NUGs for the rate year and thus its involvement should have been proportionally reduced.

13.1.27 The Board will therefore only allow IPPSO a total of 80 percent of its reasonably incurred costs.

SEAWAY

13.1.28 Seaway filed a late argument in which it requested costs for its intervention. The Board did not hear from any parties that they objected to the filing of the argument. The Board wrote to Seaway informing it that the Board would accept the argument but would take the lateness of its filing into account in awarding costs.

13.1.29 As a result of the request for costs being filed after Hydro filed its argument, the Board has no comments from Hydro in regard to Seaway's request.

Board Findings

13.1.30 In view of Seaway's tardiness in submitting its argument, the Board will allow only 75 percent of its reasonably incurred costs.

AMPCO

13.1.31 AMPCO submitted that it focused on OM&A issues directly related to its interest in keeping Hydro's 1993 rates as low as possible. It argued that it made a conscious effort to avoid repetition and meet the timetable set for the hearing and, in so doing, it claimed that it assisted the Board and contributed to the process.

13.1.32 Hydro submitted that part of AMPCO's evidence was of marginal use because it contained substantial errors and that part of it was duplicative and therefore of little value to the process.

Board Findings

13.1.33 The Board does not agree that the duplicative portion of AMPCO's evidence was of little value. On the contrary, industry witnesses testifying to the effects of electrical rate increases on jobs and investment in Ontario is of great value to the Board in making its recommendations.

13.1.34 However, the Board did not find that AMPCO's argument was as helpful as it could have been because it concentrated on the extremes. The Board thus is of the opinion that AMPCO should be awarded 80 percent of its reasonably incurred costs.

Mr. Wade

13.1.35 Mr. Wade did not request costs. However the Board notes that he is in receipt of a funding award and being without counsel, may not be familiar with the Board's practice. The Board will thus award Mr. Wade 100 percent of his reasonably incurred costs.

Lake Superior Power Inc.

13.1.36 On July 28, 1992, the Board received a letter from the counsel acting for Lake Superior Power Inc. which requested costs. The Board is concerned because the request for costs was late and the involvement by Lake Superior Power Inc. was minimal and it did not submit argument. The Board is therefore of the opinion that the intervention was of limited assistance to the Board and it awards Lake Superior Power Inc. 50 percent of its reasonably incurred costs.

13.2 COMPLETION OF THE PROCEEDINGS

13.2.1 All intervenors who have been awarded costs shall file a statement of their costs in accordance with paragraph 13.1.2 herein with the Board Secretary by September 30, 1992.

13.2.2 Hydro is ordered to pay the costs of those intervenors who have been awarded costs after these have been assessed by the Board's Assessment Officer, in accordance with the Board's Findings herein and upon receipt of the Board's Cost Order.

13.2.3 Hydro is also ordered to pay the Board's Costs of H.R. 21 upon receipt of the Board's Cost Order and invoice.

APPENDIX A

GLOSSARY OF TERMS

H.R. 21

GLOSSARY OF TERMS

Acid Rain - A general term describing precipitation that has been acidified by the presence of atmospheric pollutants.

Average Megawatts - The energy produced or consumed in MWh, for a period of time, divided by the number of hours in the period.

Avoided Costs - A project specific cost which Hydro can avoid when private electricity generation or energy management displaces Hydro's own generation and is determined by applying the System Incremental Costs to the power (MW) and energy (Mwh) expected to be delivered by the project over the term of the proposed contract and is influenced by such factors as timing, relative power and energy delivery profiles and dispatchability.

Bulk Electricity System (BES) - The generation system, the transmission system and all facilities installed for their control or protection.

Base Load - The minimum normal load consumed during a specified time period, usually a day.

Bulk Power Costs - Hydro's total annual cost of operating, maintaining and administering the BES.

Buy-Back Rate - The rate which Ontario Hydro pays to purchase power from independent producers.

Calandria - A cylindrical reactor vessel in CANDU reactors which contains the heavy water moderator and the tubes containing the uranium fuel. The reactor core consists of all of the components within the calandria.

CANDU - A Canadian-developed nuclear power reactor system. The name is derived from CANada -Deuterium - Uranium, indicating that the moderator is heavy water, and that the fuel is natural uranium.

CANDU Owners Group (COG) - A group comprising the Canadian CANDU-owning utilities and Atomic Energy of Canada Limited. The group mandate is to promote closer cooperation in the areas of plant operation and maintenance and developmental programs that lead to improved nuclear plant performance.

Capability - The maximum load that a station or equipment is capable of carrying under specified conditions.

Capability Factor (CbF) - The ratio of the energy which could have been delivered by a generating source over a period of time, (if there were no problems or restraints external to the source), to the energy which would be delivered if the source operated continuously at its maximum continuous rating over the period.

Capacity - In the electric power industry, this word has two meanings:

1. Power, that is, the rate of delivery of energy. For example, a utility might sell 50 megawatts of capacity, i.e. of power.
2. The maximum quantity of power that some piece of equipment is capable of producing or carrying. For example, a generating unit might have a rated capacity of 50 megawatts.

Capacity Factor (CF) -The ratio of the energy delivered by a generation source over a period of time, to the maximum energy which would be delivered if the source operated continuously at its maximum continuous rating over the same period of time.

Capital Program Costs - The costs of the construction and commissioning of capital facilities, including the interest associated with financing during construction, major modifications to these facilities, the production of heavy water, training costs, and the purchase of minor fixed assets.

Cash Flow Coverage Ratio (CFCR) - A financial ratio that measures the extent to which funds from operations cover interest payments. It is also a measure of fixed charge coverage. It is defined as the ratio of internally generated cash flow plus interest costs charged to current operations to gross interest costs.

Cogeneration - The combined production of electricity and useful heat. Cogeneration is often employed at industrial plants where the heat produced can be utilized in the manufacturing processes and for general space heating. Cogeneration facilities use significantly less fuel to produce electricity and thermal energy than would be needed to make the two separately.

Coincident Peak - The maximum peak demand of all customers occurring at the same time. When the maximum or system peak occurs, not all loads on a power system reach their maximum value at this same time. The sum of these individual customer peaks, occurring at different times, constitutes the "noncoincident peak". The coincident peak of the system is invariably less than the noncoincident peak.

Corporate Burden - The corporate cost of providing benefits to employees.

Cost Allocation - The cost allocation process separates Hydro's revenue requirement components into common, non-common and rural distribution functions, and subsequently allocates these groupings of costs to rate classes.

Cost Escalation - The increase in costs over time usually expressed as a compound rate or as an index.

Customer Classification - The segmentation of Hydro's customers for purposes of cost allocation. (Distributors, comprised of the individual municipal utilities and the distributing companies; and the Power District, which services the direct industrial and rural retail customers).

Derating Adjusted Forced Outage Rate (DAFOR) - A refinement of the Forced Outage Rate in that it includes the effects of forced deratings. The effect of such a partial loss of capability is included by calculating its equivalent full outage time and adding this to the forced outage time.

Debt Ratio - The ratio of debt to total capital. It is a measure of financial soundness and focuses on (debt and equity) the long-run financial and operating structure of the corporation.

Decommissioning Costs - The costs of transforming an in-service facility into a safe and socially acceptable, permanently out-of-service state.

Demand - The load consumed by a customer, a group of customers, or a system in a stated period of time such as a month or a year.

Demand Charge - The component of a two-part price for electricity based on a customer's highest demand for power in a specified period, usually a month. The other component of the two-part price is the energy charge.

Depreciation - The gradual exhaustion of the service capacity of fixed assets which is not restored by maintenance practices. It is the consequence of such factors as use, obsolescence, inadequacy and decay.

Distributors - Refers collectively to municipal utilities and the Power District. The Power District is subsequently divided into two customer classes, rural retail and direct industrial customers.

Diversity - The phenomenon of differing maximum loads being experienced at different times. The demands represented by such loads are said to be "noncoincident". Diversity results in the total peak demand on a power system being less than the sum of all its individual load peaks.

East System and West System - The division of Ontario Hydro's facilities using a line which runs roughly north-south, intersecting the transmission circuits which join Marathon and Wawa, just west of the Wawa Transformer Station.

Economy Energy - Energy sold by one power system to another to effect a saving in the cost of generation when the receiving party has adequate capability to supply the loads on its own system.

Embedded Cost of Debt - The weighted average cost of outstanding long-term debt.

Emission Limit - The maximum level of substances or energy allowed by law to be released into the environment e.g., sulphur dioxide, noise, heat, radiation.

Energy - The capacity for doing work. It is equal to the average power that the system can sustain over an interval, multiplied by the time duration of the interval. Energy is typically reported in kilowatt - hours (Kwh) or related units:
1 megawatt-hour (Mwh) = 1000 Kwh
1 gigawatt-hour (GWh) = 1000 Mwh
1 terawatt-hour (Twh) = 1000 Gwh

Energy Charge - The component of the price for electricity which is based on the amount of energy taken.

Energy Costs - For a customer, energy cost is that portion of the bill which is based on energy usage. For the power supplier energy costs represent the costs incurred to meet its customers' energy requirements.

Energy Demand - This is the average energy required to supply a load over a stated period of time.

Equity - Represents the amount invested in the electricity system, which has been contributed by customers in the form of net income or invested by the Province of Ontario.
equity:
= equity accumulated through debt retirement appropriations
+ reserve for stabilization of rates and contingencies
+ contributions from the Province of Ontario as assistance for rural construction

Excess Capacity - The amount by which installed operational capacity exceeds required capacity including an appropriate reserve margin.

Financial Soundness - The ability to meet financial obligations and to withstand situations that have potential adverse financial consequences.

Firm Loads - Loads to be supplied to a customer whenever required provided physical equipment permits.

Firm Power - Electric power available to be used by the purchaser at all times during the period of the contract.

Forced Outage - An unscheduled or unplanned outage whose starting time is not postponable beyond the weekend following the occurrence of its initiating cause.

Forced Outage Rate (FOR) - The percentage of forced outage time in a specific time interval.

Fuel Bundle - An assembly of metal tubes (referred to as pencils) containing cylindrical nuclear fuel pellets ready for insertion into a reactor.

Generally Accepted Accounting Principles (GAAP) - Those accounting principles which have been established in a particular jurisdiction by formal recognition by a standard setting body, or by authoritative support or precedent.

Generating Station - A station consisting of one or more generating units for the production of electricity. Hydro's main types of generating stations are hydroelectric, nuclear, and fossil-fuelled (coal, oil or natural gas).

GIGA - A prefix used to indicate a billion units of a certain quantity. One GW of power is equal to one billion watts or one million kilowatts of power. One Gwh of energy is equal to one billion watt-hours or one million Kwh of energy.

Gross Interest - The interest and amortization of bond discount on bonds payable
+ interest on notes payable
+ interest on bank loans
+ interest on other long-term debt
+ interest on accrued provisions
+ foreign exchange on bond interest payments
- amortization of gain/(loss) on premature retirements

Heavy Water - A form of water composed of deuterium and oxygen, instead of hydrogen and oxygen. It is used in CANDU reactors as a coolant and/or moderator.

Interconnection Agreement - An agreement made between two power utilities to govern the operation of interconnections between their systems. Typically such an agreement defines different classes of inter-utility transfers and specifies how they shall be priced between the two companies.

Interconnected System - A system consisting of two or more individual power systems connected together by tie lines.

Interest Capitalization Rate (ICR) - The rate applied to indicate financing costs associated with fixed assets under construction and what amount will be capitalized.

Interest Capitalized - The portion of gross interest associated with the financing of assets under construction (including heavy water production) and unamortized advances for fuel supplies.

Interest Coverage Ratio - The ratio which measures the extent to which net income covers gross interest payments. Hydro uses two interest coverage ratios. The first, referred to as the **level of interest coverage ratio** or simply the interest coverage ratio, is defined as the ratio of net income plus gross interest, to gross interest. The second, the **quality of interest coverage ratio**, is defined as the ratio of interest costs charged to current operations to gross interest. These ratios indicate the extent to which fixed charges are covered by operating income.

Interruptible Loads - Loads supplied at a lower price because they may be interrupted under the terms of Hydro's contract with the customer.

Irradiated Fuel - Used nuclear fuel whose fissionable isotopes have been partly consumed and which has accumulated fission-product poisons to such an extent that it can no longer sustain a chain reaction.

Kilowatt (kW) - A measure of power, equal to one thousand watts. A kilowatt is approximately equal to one and one-third horsepower.

Kilowatt Hour (kWh) - The commercial unit of electric energy equal to 1000 Wh. The amount of electricity consumed by ten 100 W light bulbs burning for one hour.

Lead Time - The period between the start of planning for a project and the in-service date of the plant.

Load - The amount of electric power or energy consumed by a particular customer or a group of customers. Load differs from demand. Since load is measured at the customers' delivery point and is equal to the demand less transmission losses.

Load Factor - The ratio of the average load during a designated period to the peak or maximum load in that same period. (Usually expressed in percent).

Locked-In Energy - Energy which cannot be delivered to the Bulk Electricity System due to a mismatch between the generating capacity at a site and the capability of the available transmission to deliver the energy.

Maintenance Outage - An outage whose starting time cannot be postponed from one season to another but when the outage is required can be postponed beyond the next weekend.

Maintenance Outage Factor (MOF) - The percentage of time on maintenance outage in a specified period.

Median Streamflow - The median of all recorded flows in a river during a specified period.

MEGA - A prefix used to indicate a million units of a certain quantity. A MW is equal to a million watts of power and a MWh is equal to a million Wh of energy.

Mothballed - An in-service unit that has ceased operations and is placed in a condition that ensures its safe storage during a period when it is no longer required for energy production or operating reserve purposes.

Net Income - The residual amount remaining after deduction of all expenses from revenues. Hydro's net income comprises the SDR amount and the RSC provision.

Net Interest - Referred to as "interest" in the Statement of Operations, represents the interest costs attributable to the debt used to finance the assets in-service.
net interest =
- gross interest
- interest charged to construction in progress
- interest charged to heavy water production
- interest charged to unamortized advances for fuel supplies
- interest charged to fuel for electric generation
- interest earned on investments

Non-Utility Generation (NUG) - Electrical generation in Ontario owned and operated by electricity producers other than Ontario Hydro; includes private and municipal utilities, and private power producers. Also called **"parallel generation"**.

Nuclear Generating Station (NGS) - A station producing nuclear power.

Nuclear Power - Power generated at a station where the energy to make steam to drive the turbines is produced by a nuclear reaction.

Non-Operating Reserve Facilities - Facilities which are shutdown or mothballed for future use.

Nuclear Payback Agreement - Payback arises from the Pickering Agreement between Ontario Hydro, Atomic Energy of Canada Ltd. and the Province of Ontario. The three parties to the Agreement shared the capital cost of constructing the nuclear-fuelled Pickering Units 1 and 2. The payback is made based on the net operational gain of having electricity generated by Pickering Units 1 and 2 instead of at the coal-fired Lambton TGS.

Outage - When a system element is separated from the system as a result of a fault or other cause. An outage may not necessarily result in a load interruption.

Peak Demand - The maximum demand consumed by a customer, a group of customers, or a system in a stated period of time such as a month or a year. The value may be the maximum instantaneous demand or more commonly the average demand over a short interval of time such as one hour.

Peak Load - The maximum load occurring during a specified period of time. It may be an instantaneous value or the average for a defined short time interval. The peak load of a system is the maximum coincident total of all customer loads.

Peak Load Generation - Electric power produced during the daily peak load periods.
Peak Power - The maximum rate of delivery of energy sustained over an interval of time.

Peaking Unit - A generating unit intended to be operated intermittently to supply peak loads.

Planned Outage - An outage whose starting time can be postponed from one season to another. This type of outage includes periodic major overhauls.

Planned Outage Factor (POF) - The percentage of time spent on planned outage in a specific time interval.

Power - The rate of generating, transferring or using electric energy, expressed in watts (W) or the following related units:
1 kilowatt (kW) = 1000 watts
1 megawatt (MW) = 1000 kW
1 gigawatt (GW) = 1000 MW

Power Corporation Act (PCA) - The enabling legislation for Ontario Hydro and referred to as the Power Corporation Act, R.S.O., 1980, Chapter 384, as amended.

Power District - An additional cost municipality comprising the direct industrial group of customers and the rural retail customers created by Hydro for costing purposes.

Power Purchases - Firm and interruptible purchases of power from other utilities or the NUG industry.

Power System - All the interconnected facilities of an electrical utility. A power system includes the generating stations, transformers, transmission lines, substations, distribution lines, and circuits to the customers' premises. A system consists of all the facilities required to provide service to the customers.

Pressure Tubes - Tubes which house the fuel bundles containing uranium. They must be designed to withstand the circulation of high pressure coolant. They are positioned inside the calandria and are immersed in the moderator.

Primary Sales - The electricity which is delivered to the contracted "firm" and "interruptible" loads within the Province.

Rate of Return on Equity - The net income of the utility expressed as a percentage of the amount of equity invested.

Revenue Requirement for Primary Sales - The revenue that must be collected from customers to meet Hydro's costs including net income, less secondary sales revenues. Other costs include operation, maintenance and administration (OM&A), fuel and fuel-related, depreciation, and interest and foreign exchange.
revenue requirement
= costs as per statement of operations
+ net income requirement
- revenues from secondary sales

Scrubber - A device for the removal of entrained liquid droplets, dust, or an undesirable gas component.

Secondary Sales - Sales of Power surplus to primary system requirements, usually provided at the convenience of Ontario Hydro to interconnected utilities.

Split Savings - A widely-used formula for the pricing of energy, especially economy energy sold by one utility to another, in which the total saving resulting from a sale is split equally between buyer and seller.

Spot Price - The price of a fuel, purchased on the spot market. A spot market is a commodity market in which transactions are not covered by previous contractual commitments and are struck on an "ad hoc" basis.

Stability - The ability of power systems to remain in synchronism.

Rate Stabilization and Contingency (RSC) Reserve Provision - A discretionary account, allowed in the PCA, section 15, whereby Ontario Hydro may include in the cost of power an amount for the purpose of adjusting and apportioning its rates and for contingency expenditures.

Reserve for Rate Stabilization and Contingencies (RSRC) - The net accumulated value of the RSC provisions less any amounts used for authorized purposes. Shown on the statement of financial position as a component of equity.

Statutory Debt Retirement (SDR) Amount - A provision in the PCA, section 75, for the cost of power to include an amount for the repayment of basic debt.

Statutory Debt Retirement (SDR) Fund - The accumulated value of the annual SDR amounts shown on the statement of financial position as a component of equity.

Synchronism - The necessary condition of interconnected alternating current generators being "in phase", that is, timed, so that their voltage waves reach the maximum and minimum values at exactly the same instant.

System Incremental Costs (SIC) - The incremental capital and operating costs for the extra capacity and energy requirements to meet additional demand using the existing and planned power system of Hydro.

Target Net Income - As currently, practiced by Hydro, a level of net income in any year sufficient to achieve a coverage of 1.05 on interest charged to operations combined with a coverage of 1.50 on interest capitalized, and a cash flow coverage ratio above 1.0.

TERA - A prefix used to indicate one trillion units of a certain quantity. One TW is equal to one trillion watts of power and one TWh is equal to one trillion Wh of energy.

Thermal Generating Station (TGS) - An electric generating station where the turbines are driven by gases or steam produced by burning fuels or by nuclear processes.

Time-of-Use (TOU) Rates - The application of lower rates during night time, weekends, holidays and summer; the application of higher rates during day-time, work days and winter.

Transmission Line - A line used for the transmission of electric power at high voltage.

Unallocated Load - An amount, determined by judgment on the basis of model predictions and experience, which is applied to the regional estimates in order to arrive at the forecast sum of customers' loads. Its purpose is to reduce forecast error.

Watt - A measure of electrical power, i.e. a 100 watt lightbulb.

Watt Hour (Wh) - A measure of electrical energy; equal to power (watts) multiplied by time (hours), i.e. and 100 Watt lightbulb operating for 10 hours requires 1000 Watt hours.

Wheeling - The transmission of power belonging to one utility through the circuits of another utility for delivery either to a third party or back to the originating system.

APPENDIX B

EXECUTIVE SUMMARIES OF THE ARGUMENT OF PARTIES TO THE HEARING

H.R. 21

EXECUTIVE SUMMARY OF BOARD STAFF

I. INTRODUCTION

In 1992, for the fourth year in a row, the utility is proposing to withdraw a substantial amount from the reserve for stabilization of rates and contingencies (RSRC) to meet its statutory debt requirement.

The present financial crisis is the product of a number of forces:

(a) A current and deep provincial recession dramatically reducing revenues;
(b) Hydro's historical mega-project philosophy, the accounting impact of which is the simultaneous activation of $14 billion of assets at Darlington in rates in a single year;
(c) An accounting strategy of deferring as much of the cost of major capital expenditures as possible into the future;
(d) A current focus on demand management that adds substantially to current costs and reduces current revenues; and
(e) Hydro's policy of no real rate increases in the 1980s, whereby rates were designed to not exceed inflation, which resulted in reserves that were inadequately built up in good years, providing an insufficient buffer for difficult times.

If costs contribute a limited amount and rate increases must be modulated in light of current circumstances, we must return with increased vigilance to themes sounded in past references:

(a) An increasing vigilance must be paid to questions of productivity within the utility; and
(b) Examination must continue of all available alternative mechanisms that can be used by the utility to reduce its costs.

Another issue which has emerged from this reference is the need to improve the public review process of current and future plans. In this climate where political direction and financial accountability are split, an independent review, both short-term and long-term, is essential not necessarily to regulate but to put into the public domain the key issues relative to a critical institution in the life of the province. Only this will ensure the attainment of sound outcomes.

II. ECONOMICS AND LOAD FORECASTS

Hydro's consensus forecasts were internally inconsistent in H.R.21, since the range between forecasts in the consensus was between 6 months and 2-3 months respectively. This caused the consensus numbers to be of little use in getting an accurate representation of the current state of the economy from external forecasters, thus making it difficult to compare Hydro's internal forecasts.

RECOMMENDATION:

2.1 Hydro's consensus compilation should be consistent in terms of the internal assumptions made, the primary one being the timing of the forecasts that make up the consensus.

Hydro's forecast for Ontario GDP growth, based on recent data, did not appear to represent as reasonable a growth estimate as Dr. Stokes' did. Dr. Stokes outlined his rationale in the context of recent economic data, and since Dr. Stokes' Ontario GDP number was lower, an adjustment must be made to net income.

RECOMMENDATION:

2.2 Hydro should adopt Dr. Stokes' forecast of 1.6 percent and 3.5 percent for 1992 and 1993 Ontario GDP growth respectively in that this forecast better reflects prospects for current and future recovery. Net income should thus be adjusted downward by $51 million.

The current trend in long-term interest rates supports Dr. Stokes' directional contention for interest rates over the next two years, while Hydro predicts that rates will rise. Recent economic data has supported Dr. Stokes' forecast. Net income therefore requires an upward adjustment.

RECOMMENDATION:

2.3 Board Staff recommends that the long-term interest rate for 1993 of 8.7 percent be used for rate-setting purposes. Consequently, 1993 net income should be adjusted upward by $29 million.

Board Staff believes that Dr. Stokes' cost-based analysis of the Canadian dollar best represents its true value, which is a lower value than that derived by Hydro's price-based methodology. The adoption of Dr. Stokes' forecast causes a decrease in net income.

RECOMMENDATION:

2.4 Hydro should adopt a forecast for the Canadian dollar of 81.2 cents U.S. for 1993 planning purposes. The negative net income impact of this recommendation is $15 million for the 1993 rate year.

Hydro's load forecast is not based on Ontario GDP numbers that reflect current or likely economic activity. The use of Dr. Stokes' Ontario GDP forecast would provide a more realistic load forecast.

RECOMMENDATION:

2.5 Hydro should use 1.6 percent and 3.5 percent for 1992 and 1993 Ontario GDP growth as the main input into Hydro's load forecast models for 1992 and 1993, and that the models should be re-run to reflect this change.

The use of load forecast models based on sectoral growth figures should provide a check on Hydro's existing methodology and should alleviate some of the weaknesses described in the hearing.

RECOMMENDATION:

2.6 Hydro should employ a sectoral approach to GDP and electricity consumption forecasts, which should be used as a check on the short-term load forecast.

III. ENERGY MANAGEMENT

Board Staff submits that Hydro's 1993 energy management budget and targets should be set to balance short-term financial considerations with the established long-term energy management targets. As well, Hydro's 1993 plan should be set to meet the following goals:

(i) to minimize the cost of achieving the long-term targets;
(ii) to minimize the cost of achieving short-term targets; and
(iii) to minimize cross-subsidization between customers.

RECOMMENDATION:

3.1 Hydro should defer a number of the DSM programs planned for 1993, reduce the total program budget, and redirect a portion of the budget reduction to longer-term activities.

Hydro should defer some of the discretionary programs currently planned for implementation in 1993. In order to identify programs to be deferred, Hydro should prioritize programs in 1993 with the aim of addressing the following goals which flow from the general goals listed previously:

(i) to capture lost opportunities;
(ii) to maximize benefits to Hydro; and
(iii) to minimize cross-subsidization.

RECOMMENDATION:

3.2 Hydro should develop a 1993 program plan which results in a 60 MW reduction in the load saved target, while reducing capital expenditures by $50 million and OM&A expenditures by $10 million. This reduced load impact will increase net revenues by $9 million.

Now that Bill 118 has passed, Board Staff submits that Hydro may be pressured to implement (or may choose to implement) fuel substitution programs quickly. Given how little was reported to the Board in terms of program development, Board Staff submits that there is a risk that insufficient groundwork will have been completed prior to the implementation of these programs.

RECOMMENDATION:

3.3 Increased resources should be dedicated to the development of fuel substitution programs.

Board Staff submits that Hydro has made progress in the formalization of its monitoring process, but that priority should be given to the speedy implementation of the auditor's recommendations. Board Staff submits that Hydro has also made progress in the area of program evaluation. However, developing comprehensive evaluation plans and completing interim evaluations should be a priority for all programs. This is important for the assessment of load impacts as well as for the assessment of the cost-effectiveness and efficiency of the programs.

RECOMMENDATION:

3.4 Increased resources should be dedicated to program evaluation activity.

Board Staff submits that Hydro has laid the groundwork for municipal utility cooperation in the form of the large utility Memorandum of Understanding. However, there has not been much progress in reaching agreements with the individual utilities. The same appears to be true of the smaller utility action plans.

Such agreements or plans will be particularly important in the context of developing and delivering fuel substitution programs.

RECOMMENDATION:

3.5 Increased resources should be dedicated to the development of Hydro/municipal utility agreements or plans, and specific timetables should be set.

IV. NON-UTILITY GENERATION

Hydro's NUG policy has changed drastically since HR 20, creating opportunity losses in Ontario and hardship for some NUG proponents who spent time and effort to respond to Hydro's first request for proposals.

Under Hydro's original policy, all economic and technically feasible NUG projects were accepted and the Corporation promised to reduce the size and scope of its operations to accommodate viable NUG projects. This open-door policy, which is currently under review, was suspended at the end of 1991. Hydro is currently operating under an interim policy, which Board Staff submits, should not be continued indefinitely due to the potential of a permanent loss of NUG capacity.

Of the total of 53 outstanding projects at the time of the policy change, only 13 proposals were allowed to continue negotiations.

RECOMMENDATIONS:

4.1 Hydro's interim policy should not be continued indefinitely, and if required, changes should be made to ensure that the loss of potential NUG capacity will not unduly limit Hydro's future supply options.

4.2 Hydro's new policy, which is currently under review, should permit the setting of annual NUG capacity targets which would allow larger NUG projects to prevent long-term loss of NUG capacity.

Board Staff contends that some of the current NUG problems were caused by a gap in the planning and approval process for capital projects, whereby short-term capital decisions are not subject to public review. The problems due to the lack of a public review were exacerbated by Hydro's avoided cost methodology which does not compare the market value of the various supply options.

RECOMMENDATION:

4.3 Hydro's short-term planning decisions, should be reviewed by the OEB to ensure a least cost mix of generation and transmission facilities. In this regard, utility and non-utility supply and demand options should be ranked on a cost per MW basis.

Board Staff recommends that competitive bidding be used for new additions of NUG supply. Competitive bidding would permit NUGs to compete against Hydro's supply options, resulting in lower purchase prices for Hydro.

RECOMMENDATION:

4.4 Competitive bidding should be used in subsequent NUG supply additions.

Hydro's interim NUG policy allows small (5MW or less) and hydraulic projects to proceed, as well as a limited number of special projects. Hydro has not determined what the selection criteria will be, nor has it specified any limit on the use of this exception to its policy.

RECOMMENDATION:

4.5 Hydro should define the criteria and the capacity limits for special NUG projects.

The issue of environmental dispatch, which involves placing a value on air emissions and other externalities associated with electric generation, was introduced by IPPSO. While Board Staff agrees in principal with IPPSO's proposal, Staff submits that there is no immediate need to implement environmental dispatch.

RECOMMENDATION:

4.6 The issue of environmental dispatch, and the related issue of the evaluation of environmental externalities, should be submitted to this Board after the EAB findings are available.

The issue of Third Party Access, which would grant NUGs open access to Hydro's transmission grid, was once again championed by Energy Probe. Under Hydro's current policy, wheeling is permitted between a generator and end-user, but only if both parties are owned by the same legal entity. Third Party Access (TPA) or open access is not permitted on Hydro's transmission grid.

Energy Probe contends that TPA would be beneficial to the ratepayers of Ontario because it would expose Hydro to competition and lower electricity prices. Hydro argues that implementing TPA is not as simple as Energy Probe suggests and that in any case the industry has not requested that Hydro implement open access.

Board Staff contends that the Board does not have sufficient evidence to determine if TPA would be in the best interests of the ratepayers of Ontario, but that the issue is of fundamental importance to the operations of Hydro. Accordingly, Staff believes that wheeling and TPA should be studied further and the results presented to the Board or some other public forum.

RECOMMENDATION:

4.7 The Board should recommend to the Minister of Energy that he refer the issues of wheeling and third party access to this Board or some other public forum for review to determine if such a system would be technically feasible, economically viable, and equally beneficial to all ratepayers.

Hydro's right to be the exclusive supplier of electrical energy and to grant or withhold the right of first refusal in the province has no statutory foundation. Hydro's supply contracts with the municipal utilities contain clauses which give Hydro the exclusive right to supply electricity to each municipal utility, but municipalities can purchase their own NUG facilities and self-displace the current load they obtain from the Corporation.

Board Staff submits that if municipal electrical utilities (MEU) are allowed to self-displace through NUG power purchases, Hydro's operating and fixed costs will be shifted to the remaining customer groups, precipitating a "death spiral", whereby the exit of the first group of municipalities will cause Hydro's costs to rise sufficiently to motivate some of the remaining municipalities to leave the system.

RECOMMENDATIONS:

4.8 Until the issues of Third Party Access and wheeling are studied in detail, Board Staff recommends that Hydro continue to rely on its contractual exclusivity rights.

4.9 Hydro should submit a report to the OEB in HR 22 describing the status of its discussions with the MEA on this issue.

V. FUEL AND FUEL RELATED

Hydro's fuel evidence states that "the CES energy forecast is based on median forecasts of independent input variables". One would expect that under median forecasting, there would be positive and negative forecasting errors over time. Hydro's forecasting record shows that there are two major inputs into the CES process that do not exhibit this characteristic. They are capability factor forecasts (nuclear, fossil, and hydraulic) and return/in-service date assumptions for Darlington. These two factors have caused significant, continual, and unfavourable variances in fuel costs because of their effects on the generation mix.

A median capability forecast should account for factors that will both increase and decrease capability, and provide equal probability for overestimation and underestimation. Although there have been recent improvements in capability factor forecasts, Board Staff believes that the 1993 capability forecast is optimistic. The factors leading to this submission are:

1. the expected delay in Darlington and the impact on 1993 planned outages
2. uncertainties due to steam generator problems; and
3. preliminary results of the probabilistic forecasting model

RECOMMENDATIONS:

5.1 It is recommended that the 1993 nuclear capability forecasts be reduced by 1 percent to account for the expected increases in planned outages in 1993 and reduced by a further 1 percent to account for the uncertainties with respect to the potential steam generator problems. The total impact on nuclear generation is a reduction of 2.4 TWh. The total impact on net income is a decrease of $34 million.

5.2 The fossil generation forecast for 1993 should be increased by 2.4 TWh to reflect the 2 percent reduction in average nuclear capability factors for 1993. The associated acid gas emissions should be adjusted accordingly.

The Darlington impeller test results will be finalized in early July. The results may indicate that further modifications are necessary, such as piping modifications, before any power could be produced. Under this scenario, there would be an average delay of 7 unit months.

Board Staff submits that based on the historical record of Darlington in-service delays, the high probability that further modifications are necessary, and Hydro's stated position to find a permanent solution, the delayed in-service dates should be used for rate-setting and planning purposes.

RECOMMENDATION:

5.3 **The in-service dates for Darlington Units 1 through 4 should be delayed by an average of 7 months to May 1993 for Unit 1, January 1993 for Unit 3, June 1993 for Unit 4, and August 1993 for the return to service of Unit 2. The financial impact of these changes is to increase net income for 1992 by $176 million.**

VI. OM&A AND CAPITAL

The total 1993 OM&A forecast is $2,305 million. This represents approximately 26 percent of the 1993 revenue requirement. The 1993 budget is $199 million over the 1992 budget of $2,106 million, which represents a real increase in OM&A costs of approximately 6.5 percent.

In 1989, Coopers & Lybrand reviewed Hydro's business planning and budgeting process, and found that insufficient information was available for senior management to make decisions between alternatives, and make trade-offs among major programs. In 1991, Hydro replaced its budgeting process with the imposition of resource ceilings and result floors for OM&A and capital expenditures. Hydro now views the budgeting process as a cost control measure. Ultimately, senior management is accountable for the achievement of these results, and is responsible for the decision-making process regarding resource levels and the ensuing implications. Board Staff submits that Hydro uses the resource ceilings as a budget guideline, but not as a cost control measure. There is no formal review by senior management of existing programs. Given that senior management no longer has access to information which would allow it to make resource allocation decisions, there can be little confidence that the resource ceilings for either the support or the operating branches are being set at an appropriate level.

RECOMMENDATIONS:

6.1 **Both existing and new programs must be evaluated by senior management through the budgeting process to set the branch budgets as low as possible without jeopardizing the corporate objectives.**

6.2 **Support branches should try to achieve result floors at a cost below the resource ceiling, regardless of the financial situation of the corporation. Operating branches should try to stay within resource ceilings while increasing result floors during times of operational difficulty; otherwise, they too should try to achieve results below resource ceilings.**

6.3 If the budgeting process is to be an effective cost control mechanism, resource ceilings must be the maximum expenditure to achieve the required objective/result.

In response to the deteriorating financial situation, Mr. Eliesen directed all branches to identify a 5 percent reduction in program costs from the budgeted resource ceilings for 1992 and 1993. Further budget reductions were identified in June 1992. Significant amounts are being cut from the nuclear, fossil, retail, transmission and demand management programs. Given the continued upward pressure on nuclear costs, there will have to be trade-offs in other program areas. The greater allocation of resources made to nuclear in the past has been to the detriment of other areas of the Corporation such as transmission, fossil and hydraulic maintenance. It is submitted that Hydro should avoid repeating this situation.

RECOMMENDATIONS:

6.4 In light of the continuing financial pressures facing Hydro, it is essential that Hydro not divert maintenance funds at the expense of the fossil, hydraulic and transmission programs.

6.5 Hydro must continue to monitor nuclear, hydraulic, and fossil generation performance to determine the most efficient allocation of resources. Investment in the nuclear program should only continue if it is the most economic alternative based on achieved performance rather than forecast performance.

There will be continuing upward pressure on the 1993 OM&A budget due to the steam generator problems. It is therefore submitted that Hydro should do everything within its power to restrict its 1993 OM&A budget, and make the following downward adjustment.

RECOMMENDATION:

6.6 Hydro should reduce its 1993 OM&A budget by a total of $41 million.

During the period 1988 to 1991, Hydro hired CRESAP to conduct extensive reviews of Hydro's productivity, as well as to recommend effective measures for productivity. Hydro has replaced the CRESAP initiatives with the Continuous Improvement (CI) initiatives, along with the imposition of resource ceilings and result floors through the budget process, to address productivity. The CI process is an attempt to change the culture of the organization. At Hydro, the individual branches generate and manage the CI. There is no standardized framework for the implementation of programs; consequently, there is little corporate control over the CI initiatives of the various branches other than through the results achieved or budget targets. The Corporation does not have any method for monitoring the effectiveness of any costs and benefits of the initiatives on a year-over-year basis.

RECOMMENDATIONS:

6.7 Hydro should establish a common framework from which to develop the Continuous Improvement programs, and should report back to the Board in HR 22.

6.8 Hydro should set tangible goals and productivity improvements to monitor the success of the CI process, and should report back to the Board in HR 22.

6.9 Hydro should monitor and control the costs of the CI process to evaluate the effectiveness of the CI programs, and should report back to the Board in HR 22.

AMPCO presented evidence regarding Hydro's rates in comparison to other utilities and other productivity measures. AMPCO compared Hydro's productivity in three factors (labour costs, fuel costs, and capital costs) to the Canadian Electrical Association (CEA) composites. In all three cases, Hydro's total factor productivity has deteriorated significantly in recent years. AMPCO recommended that Hydro continue to monitor its performance against the CEA benchmark, and the performance of other utilities. Board Staff concurs with this recommendation, which was also made by CRESAP.

RECOMMENDATION:

6.10 Hydro's productivity performance should be monitored in comparison to the CEA composite and to the performance of U.S. utilities on an annual basis. This information should part of the prefiled evidence beginning in HR 22.

At the time the CRESAP process was initiated, it was felt that decisions regarding staffing levels should not be left at the Vice President level, but must be controlled by senior management. However, Mr. Eliesen explained that rising staffing levels was not an immediate concern of senior management, as he indicated that staff reductions would only be considered as a last resort. It is submitted that it is inappropriate for Hydro's senior management to not be concerned with the continuing rise in staff levels.

RECOMMENDATIONS:

6.11 Hydro should continue to achieve its productivity improvements through the CI initiatives.

6.12 This Board should stress the importance of senior management's monitoring, maintaining and reducing staff levels, in areas where programs are cut or by whatever means it deems conducive to the new initiatives in place at Hydro.

6.13 Hydro should be directed to report to this Board in HR 22 on its efforts to optimize staff levels and identify how senior management ensures that existing staff is effectively employed.

Hydro forecasts that its regular staff level will be at 29,745 by the end of 1993. It currently estimates that its regular staff will increase by 226 employees in 1992 and 250 more employees in 1993. Hydro's primary mechanism for controlling and monitoring staff levels, and addressing the former CRESAP objectives of reducing layers and redundancy, is now the budgeting process. Board Staff is concerned that senior management's current lack of concern with staffing levels may result in unnecessary staff additions and layering which prove to be irreversible in the future.

RECOMMENDATION:

6.14 Board Staff recommends a cut of 120 regular staff positions for 1993 thereby reducing 1993 OM&A cost by $8 million.

In HR 21, this Board recommended that Hydro improve staff level forecasting beyond the rate year (using contingencies if necessary), to provide better information for rate smoothing considerations.

RECOMMENDATIONS:

6.15 The five year staff levels which will be incorporated in budgets in the 1992 Business Planning Process should be included as part of the corporation's prefiled evidence in HR 22.

6.16 The Corporation should be directed to further report to this Board on how it is improving its forecasting and planning for staff levels in its HR 22 prefiled material.

Hydro's labour costs in 1990 were $2.4 billion, which represented about 60 percent of the total OM&A budget. Hydro's payroll expense per dollar of revenue is the highest of Canadian and American reference utilities; and its payroll cost per KWh is the highest of all Canadian reference utilities. Hydro's stated objective for some time has been to eliminate the differential between its compensation levels and those of comparable industries. However, there continues to be no timetable for narrowing these differentials.

RECOMMENDATION:

6.17 Hydro's Board, its senior management, the employees' bargaining units and the government must take steps to minimize the compensation differentials between Hydro's employees and the reference communities.

In 1990, Hydro's pension ranked first among the public sector plans to which it compared itself, and second among comparable private sector firms. A significant proportion of the compensation differential exists because of the constraint on Hydro's use of any surplus in its pension fund, arising from Section 20(4) of the Power Corporation Act (PCA), a constraint which does not apply to other corporations in Ontario. This Board has recommended to the government in the past that the Minister should introduce changes to Section 20(4) of the PCA to ensure consistency of the PCA pension provisions with the Pension Benefits Act. It is imperative that the differential between Hydro's compensation and that of reference communities must be narrowed.

RECOMMENDATION:

6.18 Board Staff recommends that the Board stress the importance of the government introducing an amendment to Section 20(4) of the Power Corporation Act to ensure that Hydro's use of any surplus in its pension plan is subject to the same constraints provided under the Pension Benefits Act and regulations.

Currently, the component of Hydro's M&P and ESR salaries relating to merit is minimal. In HR 20, this Board recommended that Hydro review its pay for performance system in the context of its review of performance measures and the CI initiatives. A study should be conducted to investigate how incentives could be included in senior executive compensation.

RECOMMENDATIONS:

6.19 Hydro should investigate how to improve its pay for performance compensation for the ESR.

6.20 A more effective way of increasing productivity may be to set clear performance measures, use those measures to assess performance and tie them to compensation.

The 1993 capital budget is now forecast to be $3,519 million. Capital program costs are forecast to decrease in 1993 from 1992 due to the forecast completion of major projects. In response to the financial situation of the Corporation, Hydro has reduced its overall capital budget for 1992 and 1993 by $220 million and $496 million respectively. Hydro has had some difficulty in forecasting the capital budget. The actual capital budget for 1990 was $546 million over budget; the actual for 1992 was $314 million over budget; and the 1992 capital budget is $334 million over the forecast provided in HR 20 to date.

RECOMMENDATION:

6.21 Hydro should improve its forecasting accuracy with respect to the capital budget.

Due to the recommendations Board Staff has made regarding the delayed in-service dates of Darlington units, the capital budget will not be as low in 1993 as forecast by Hydro.

RECOMMENDATION:

6.22 The 1993 capital budget should increase by $282 million to reflect the delays to Darlington in-service dates. This will be partially offset by the reduction in the Energy Management capital budget of $30 million.

In June 1991, Hydro announced its plan to spend $854 million over an eight-year period to rehabilitate the four Bruce A generation units, which does not include any costs for retubing Bruce A or for replacing steam generators. Other estimates of the cost for the rehabilitation and retubing of Bruce A are $2.7 billion in the next ten years. There are a number of different assumptions and consequently a number of uncertainties surrounding each cost estimate for the refurbishment of Bruce A. The Environmental Assessment Board reviews Hydro's long-term plans and capital expenditures, and this Board is restricted to reviewing capital expenditures in the rate year. This creates a significant void in the medium term: there is no regular review of capital expenditures such as the Bruce A rehabilitation program.

RECOMMENDATION:

6.23 There should be a public review of any major capital expenditures undertaken by Hydro which is traditionally beyond the scope of this Board's review. The investigation into the cost-effectiveness of the rehabilitation program of Bruce A should be performed before any significant capital expenditures are made.

VII. DEPRECIATION

Depreciation represents 16 percent of operating costs and has increased 346 million over 1992. $304 million of the increase is due to placing fixed assets in service. The impact of the DRC's original recommendations, excluding the change to the in-service life of heavy water, is $55.2 million dollars. A June 12th update reflects Hydro's decision to defer the $14 million cost associated with low and intermediate level waste disposal. The DRC's additional recommendations, including a change to the in-service life of heavy water, would represent an increase of $20.5 million to depreciation expense. Hydro does not propose to include these latter impacts in 1993 rates.

Hydro stated that they now have sufficient evidence available to make a minimum estimate which can be used to develop a provision for the decommissioning costs of low and intermediate level waste disposal. The DRC recommended, and the Audit Committee approved, an estimate of $14 million, to be include in revenue requirement. A June update indicated Hydro's plans to defer approval of the plan pending further consideration of the disposal versus storage options.

Board Staff submits that the appropriate matching of costs and benefits would require that a portion of total estimated decommissioning costs be included in depreciation for each year the nuclear generating stations are in operation and sending waste to RWOS.

RECOMMENDATION:

7.1 A $14 million provision for low and intermediate level waste disposal should be included in depreciation expense.

As a result of Hydro's DSP update, the DRC recommended changes to the current average service lives of In Service Heavy Water, Bruce Heavy Water Plant, Fossil Fuel Plants and Used Fuel Management provisions. The net impact of these recommendations is $20.5 million. The DRC recommended that: the current pool of heavy water be reassigned to individual generating stations and the remaining life be that of the associated generating station life, (+$33.2 million); the service life expectancy of the Bruce Heavy Water Plant change from 20 years to 17 years, (+$2.3 million); the lives of fossil fuel plants be extended from 40 years to 50 years, (-$18.8 million); the fossil generating station decommissioning provision be decreased by $5.7 million; and Used Fuel Management provision be increased by $9.4 million. Evidence was given that Hydro had taken a conservative approach of only adding 10 years to service life rather than extend life indefinitely, due to lack of experience in "life management strategy" and concerns about environmental emissions.

Hydro also testified that the impacts of the revisions resulting from the DSP update would not be included in 1993 rates since Hydro wished to await the EAB's recommendations, even though they were not seeking approvals from them. However, Hydro is incorporating the DSP assumptions in their shorter term business plans.

Board Staff submitted that these two premises are inconsistent and that the DRC's recommendations reflecting the DSP update be included in 1993 rates. Board Staff also submitted it had some reservations about the assumptions underlying the extension of fossil fuel plant lives but was willing to accept Hydro's conservative extension of 10 years for 1993 rate purposes.

RECOMMENDATION:

7.2 The 20.5 million impact on depreciation of the DSP revisions be included in 1993 depreciation expense.

After previous Board recommendations on the need for review of Hydro's depreciation policies and practices, Hydro maintained that they did not see need for retention of outside expertise in this regard. Hydro updated their responses to Coopers and Lybrand recommendations made in HR 19. They testified that they had made reductions in subaccounts by two and had some difficulty in identifying applicable dispersion patterns for some of the nuclear assets.

RECOMMENDATION:

7.3 Hydro has made limited progress in reviewing its depreciation practices and policies. It is important that the correct assumptions be made with respect to average service lives and Board Staff recommends that Hydro give serious attention to efforts in this regard.

Hydro's policy states that when the net cost of removal on retirement of fixed assets can be reasonably estimated and is significant, the amounts are amortized over the remaining service life of the fixed assets. Otherwise, these costs are charged to operations as incurred.

In HR 21, Hydro has provided for $33.3 million in depreciation for estimated costs of removals from Lambton and Bruce A. Rehabilitation work performed over the last couple of years at Lambton and Lakeview indicates that removal costs are significant. These costs have been expensed as incurred. Dr. Long indicated that there is no need for hard and fast materiality levels for establishing provisions, but that a rule of thumb is $5-10 million in annual impact.

Board Staff submits that it is appropriate to provide for removal costs during the life of an life of the asset if the costs are estimated to be significant and that firm materiality limits, be set for the determination of these provisions.

RECOMMENDATION:

7.4 Hydro should set firm materiality levels for the determination of removal provisions.

VIII. BORROWING

Hydro for the first time has implemented a borrowing "ceiling" of $5 billion as a check on potential overages from budget in the borrowing program. The ceiling was developed in an arbitrary fashion that was not based on adequate research.

RECOMMENDATION:

8.1 Hydro should continue to use a "ceiling" with respect to its borrowing levels, but that Hydro should change its policy to reflect percentage variances above budget. Hydro must also explain the links between the borrowing "ceiling" and capital availability.

Capital availability concerns were raised with respect to the possibility that Hydro may have to incur higher borrowing costs in the future due to factors such as global capital demand pressures, weak financial position, and the Province of Ontario's deficit position.

RECOMMENDATION:

8.2 In view of recent market developments, Hydro should closely monitor capital availability and associated costs.

In light of the historically low interest rate environment that exists, Hydro should consider pre-borrowing within the context of the long-term borrowing program, keeping in mind the prudent execution of current borrowing requirements.

RECOMMENDATION:

8.3 Hydro should consider further pre-borrowing to take advantage of current lows in interest rates in order to reduce future interest costs.

Hydro currently has $3.6 billion in unhedged foreign denominated debt on its balance sheet which is subject to foreign exchange risk. Hydro has arbitrarily chosen thresholds without providing clear and concise justification for its choices.

RECOMMENDATION:

8.4 Hydro should clearly outline the rationale of income statement and balance sheet threshold limits to ensure appropriate risk management.

Since Hydro is under considerable financial stress, its current policy of calling bonds only when a net saving of 50 basis points can be realized does not seem prudent.

RECOMMENDATION:

8.5 Hydro should re-evaluate its 50 basis point call level and choose a lower limit so that borrowing costs may be reduced.

IX. NET INCOME AND ACCOUNTING POLICY

Net Income

In HR 21, Hydro has continued to rely on the same governing principles and interim policy that it used in HR 20 to set its rate year net income and its long-term net income target. Using an interest coverage ratio of 1.20 and the Updated Financial Outlook, Hydro would require a rate increase of 14.5 percent to obtain its target net income in 1993. A rate increase of this size was determined to be inappropriate, and instead Hydro recommended a 8.6 percent rate increase for the rate year. Based on the June update, the recommended rate increase would produce a net income of $269 million and require a $303 million withdrawal from the Hydro's Reserve for the Stabilization of Rates and Contingencies (RSRC) to meet its Statutory Debt Retirement (SDR) apportionment.

Board Staff submits that Hydro's poor financial performance has continued and that it has been aggravated by the recent downturn in the economy. The Corporation's debt ratio was at a ten-year high and its interest coverage was the worst in Canada. Given the large withdrawals from the RSRC over the last four years, Hydro's reserve has been reduced to a historic low when calculated as a percentage of revenues. Hydro's inability to curtail spending and to get its nuclear plants running smoothly has severely restricted its ability to provide any substantial rate relief for its customers through rate adjustment.

Hydro believes that on balance its 1993 costs have an equal probability of rising or falling, and consequently the Corporation did not include a contingency in its 1993 net income. Board Staff submits that Hydro is exposed to a number of potential liabilities and that on average Hydro's cost are more likely to rise than fall, putting additional pressure on Hydro's 1993 net income.

As Darlington is delayed, an increasing amount of Hydro's costs are pushed into the future, increasing the Corporation's net income in the rate year but putting upward pressure on subsequent rate increases. Board Staff submits that Hydro should not rely on the Darlington safety net to bolster its 1993 net income.

Board Staff submits that a rate freeze is not possible without seriously depleting Hydro's RSRC and leaving Hydro with less than $0.4 billion to support rates in 1994 and 1995 when the Corporation may need additional rate flexibility to offset the costs from Darlington. For the same reasons, the inflation rate option should be rejected.

Although Hydro's proposed rate increase represents a more realistic level than the zero and inflation rate options, it does not adequately meet the SDR requirement and it will not improve Hydro's financial indicators. In the absence of further cost cuts, Hydro's 8.6 percent rate increase will require a $303 million withdrawal from the RSRC. If Darlington is delayed as expected, Hydro may need to rely on its reserve in 1994 and 1995, and therefore allowing a large withdrawal in 1993 is not prudent.

Based on the Updated Financial Outlook, Hydro would require a 12.4 percent rate increase to generate sufficient net income to meet its 1993 SDR requirement. Board Staff contends that this level of rate increase would be too onerous and that, in the absence of any accompanying cost cuts, the SDR option should be rejected. For the same reasons, the target net income option should also be rejected.

Board Staff recommends a 10.5 percent rate increase, to be applied in conjunction with the recommended operating and budgeting changes, so that ratepayers will not be exposed to a higher rate increases in the future and Hydro will not have to further deplete its reserve. The resulting net income should be considered conservative since it includes the accounting implications of a Darlington delay.

RECOMMENDATION:

9.1 **The Board should recommend that Hydro implement a 10.5 percent rate increase, and make the adjustments shown in Table 9.2, to maintain financial soundness.**

Accounting Policy

On May 22, 1992, Hydro announced revised plans for its accounting policy change for heavy water. Hydro justified this change by stating that the circumstances relating to heavy water production have changed. Requirements for all Darlington units have now been produced.

Board Staff submits that Hydro's current practice of capitalization of interest on the balance in the pool is inappropriate. Interest should only be capitalized on the volumes currently being produced. Most of the heavy water future-use inventory currently in the pool was constructed in past years. As such, it is a dormant asset until it is used in the future.

RECOMMENDATION:

9.2 **Interest should be charged only against the portion of the heavy water future-use pool that is physically under construction. Interest on the carrying cost of volumes already produced and ready for use, even though their use is not contemplated for a number of years, should be charged directly to operations in the year incurred.**

Commencing in 1993, Hydro will undertake sales, and produce the heavy water volumes required for those sales, only when it is able to recover the incremental costs of producing those volumes. Incremental costs are those which would not be incurred by Hydro were it not for the sale, and are defined in Exhibit 9.4.16 as energy costs, including steam and electricity, as well as any OM&A costs incurred solely to produce the additional quantities of heavy water for sale.

The sales of heavy water for a price in excess of related incremental costs represents an extraordinary circumstance, where Hydro would incur a loss based on the full cost of production, but contribute positively to the cash flow of the Corporation and improve the overall position of ratepayers, as the excess of the sales price over the incremental costs would be applied against the sunk cost of the Bruce Heavy Water Plant and related borrowing. Therefore, in this situation, the accounting treatment of any loss should not stand in the way of a sale. Board Staff would therefore agree to a deferral of recognition of losses and recovery in rates over a reasonable period of time.

This recommendation provides Hydro's customers the benefit of sales (a net contribution to the fixed costs of BHWPB), as well as a way to monitor Hydro's performance in sales of Heavy Water inventory to third parties. It also provides Hydro with additional flexibility to manage rates.

RECOMMENDATION:

9.3 **Hydro should recognize the gain or loss on sales of heavy water inventory, being the difference between the full cost of production and the sales amount, in the year the gain or loss is incurred. Where necessary, Hydro should exercise its rate-setting authority to defer recognition of these gains and losses over a reasonable period of time to years in which they may be appropriately reflected in rates.**

Hydro plans to replace its current policy of expensing actual quantities of heavy water used for loss make-up each year with an amortization charge to the pool, using the sinking fund method.

Board Staff submits that amortization is not appropriate for the heavy water inventory earmarked for loss make-up, as amortization should be used only where it is difficult to determine or allocate the cost of an asset consumed or used up in an accounting period. In the case of heavy water used for loss make-up purposes, Hydro is able to estimate with a reasonable degree of accuracy its future requirements for each year in the future, and has full knowledge each year of the quantity and cost of the inventory actually used in that particular year.

RECOMMENDATIONS:

9.4 **Volumes of heavy water used for loss make-up purposes should be charged to operations each year at the average unit mass cost of the future-use inventory pool.**

9.5 **A separate pool should be established for heavy water produced for risk management or insurance purposes. The equal benefit of this insurance to each year should be reflected by straight line amortization of this pool to the date at which sufficient quantities of heavy water are available from out-of-service nuclear reactors to meet future needs.**

Board Staff submits that should the Board determine that it is appropriate for Hydro to amortize the balance in the future-use pool, the Board should recommend that Hydro amortize the pool on a straight line basis over its useful life, for the following reasons:

(i) The straight line basis more accurately reflects the usage/benefit pattern of the asset, irrespective of source of financing;
(ii) Economic prudence suggests that costs should be recovered, within reasonable bounds, sooner rather than later;
(iii) Recovery of costs sooner would allow Hydro to pay down its debt sooner, decreasing interest carrying charges, and thus overall future rates; and
(iv) To remain consistent in its depreciation policy for all other assets of the Corporation, where significant differences in circumstances do not exist.

RECOMMENDATION:

9.6 **If the Board determines that amortization of the future-use heavy water pool is appropriate, it should recommend that the straight line depreciation method be used.**

X. PROPOSED RATES

The AMPCO panel members requested that industrial rates be held constant in 1993 at 1992 levels. They sited various examples of eroding competitiveness due to the recent trend in Ontario electricity rates. Some panel members concurred that subsidies were not the favoured method of rate control, while other panel members thought that subsidies would be appropriate. Mr. Hardy submitted that the Ontario Energy Board should recommend that the Ministry of Energy review the cost allocation methodology used by Hydro.

Board Staff submits that this rate comparison does not necessarily suggest inappropriate cost allocation by Ontario Hydro, but instead may suggest that other jurisdictions unfairly subsidize their industrial customers through higher residential rates.

RECOMMENDATION:

10.1 It is recommended that the Board recommend that the Ministry of Energy conduct an analysis of the cost allocation and rate design methodologies used in other jurisdictions, in order to determine why rates are different in other jurisdictions. Due to the potentially large level of data and analysis required, it is recommended that the Ministry concentrate on industries that are electricity-intensive, and that compete directly with Ontario industries.

The Real Time Pricing (RTP) experiment is a rate design experiment for Hydro's direct customers initiated "in support of demand management/load shifting objectives, and in an effort to address customer concerns about a lack of flexibility with regards to rates".

Board Staff supports rate design changes that promote a more efficient use of Hydro's supply resources and fairly recover the fully allocated cost of service. Board Staff submits that the RTP promotes load management, however it is not certain that the rate will recover its fully allocated costs for two reasons. First, the RTP rates will allow customers to avoid fixed costs by shifting load, and second, marginal costs may not be forecast accurately.

Although Board Staff has concerns regarding the potential shortfall in cost recovery, it supports the proposed RTP experiment because the rates encourage customers to manage their loads in response to Hydro's changing marginal costs, and provide industrial customers with the "flexibility" they may need. To mitigate the risks of fixed or marginal costs under-recovery, Hydro should monitor the variance between actual and forecast fixed and marginal cost recovery and report the results to this Board on an on-going basis.

RECOMMENDATION:

10.2 It is recommended that Hydro should report to this Board on the financial impacts of the experimental Real Time Pricing rates on an on-going basis.

Board Staff submits that the introduction of RTP (a new experimental second generation time-of-use rate structure) for industrial customers suggests the need for Hydro to be more proactive in promoting and developing TOU rates for non-TOU end-users in municipalities and the power district. There are two reasons for this submission. First, TOU rates will provide a relatively inexpensive mechanism that Hydro can use to provide a better price signal for end-users to make energy management decisions. Second, non-TOU end-users subsidize the gains made by TOU customers in the short-term and the long-term.

RECOMMENDATION:

10.3 It is recommended that Hydro accelerate its implementation of TOU rates for its non-TOU customers in the power district, and encourage and assist municipal utilities to extend TOU rates to their non-TOU customers.

XI. EXECUTIVE COMPENSATION

Ontario Hydro's Chair/CEO receives $260,000 as base salary and $389,500 as total compensation, and Hydro's President receives $325,000 in base salary and $428,900 in total compensation. Hydro's Senior Vice Presidents receive an average of $225,500 in base salary and $299,500 in total compensation. Hydro's base salary for Vice Presidents ranges from approximately $130,000 to $300,000 with an average base salary of $178,500 and average total compensation of $230,900.

Hay (Hydro's consultant) reported that Hydro's Senior Vice Presidents' and Vice Presidents' average compensation levels were well below that of the reference communities. However, the witness indicated that the discrepancy between Hydro's compensation and that of the reference communities decreases as the seniority of the senior executive scale decreases. Dr. Fay concurred with the Hay findings that the Senior Vice President and Vice President compensation levels were well below the reference communities.

In contrast, Sibson (Board Staff's consultant) reported that Hydro's Senior Vice Presidents' and Vice Presidents' average compensation levels were certainly in line with or not substantially different from the reference communities considering Hydro's size with respect to the reference communities.

RECOMMENDATION:

11.1 **This Board should report that based on the evidence presented at this hearing Ontario Hydro's Senior Executive Compensation Level is comparable to the reference communities and is appropriate.**

Essentially, Hydro's senior executives' compensation package is fixed and is not related to the organization's performance. All witnesses, questioned on the advisability of tying some of the executive compensation to performance, supported this notion.

Sibson indicated that Ontario Hydro senior executives should have a portion of their total compensation packages tied to the successful implementation of corporate strategy. Mr. Lambert indicated that accountability was very important so that all employees in the organization know that senior management is compensated based on its performance. Dr. Fay indicated that Hydro's present compensation policy is too conservative in that it does not contain long or short-term incentives related to performance in achieving organization strategy. Mr. Moorthy indicated that adding short-term and long-term incentives related to performance to the compensation policy for senior executives would be useful. Mr. Eliesen acknowledged that there was merit in Ontario Hydro moving in the direction of senior management compensation packages which included pay for performance to improve productivity.

RECOMMENDATIONS:

11.2 **Hydro's Board should institute incentives in its senior management's compensation package.**

11.3 **Hydro's Board should commission a study to determine the appropriateness of its current salary policy for senior executives and determine how to effectively incorporate incentives in the senior executive compensation.**

EXECUTIVE SUMMARY OF ENERGY PROBE

I. INTRODUCTION

Ontario Hydro is in financial, operational, and managerial crisis — threatened even with insolvency. The OEB has a role to play in containing the costs of this ongoing crisis.

Hydro's rates and debts are moving unexpectedly upward. Hydro forecasts net borrowing of $2.4 billion of new debt in 1992. Hydro has been drawing down its contingency fund every year since 1989 and plans to continue this drawdown through 1993.

Years behind schedule and crippled by design flaws, the almost $14 billion Darlington project is the world's most expensive nuclear station. Nuclear productivity in 1992 will likely hit an all-time low. Hydro is about to spend billions of dollars on its nuclear units in an effort to reverse the continuing production decline.

In the name of "cost-effective conservation", Hydro is paying customers to not use electricity while forecasting an expensive capacity surplus. The total cost of Hydro's programs to ratepayers over the 1992-1995 period is $1.925 billion.

Relative to other Canadian and U.S. utilities, Hydro's staff levels are excessive and average compensation in 1992 is expected to exceed $68,000 per employee.

If Ontario must live with Ontario Hydro as a monopoly, then evidence presented at this hearing indicates that further rates increases above Hydro's proposal are necessary even if cost cutting efforts are successful. Deferring Hydro's costs and allowing the utility to take on further liabilities will only increase the burden on future ratepayers. Fortunately, the evidence also presents a competitive alternative to continuance of the Hydro monopoly, offering much lower real costs and corresponding rate benefits to customers.

The OEB, in its reasons for rejecting the MEA's motion to have Energy Probe's evidence on wheeling and third party access disallowed stated that "the 1990's appear to require new and innovative approaches to all areas of the province's electricity management. Many of these, if accepted, will see significant changes to Ontario's generation, transmission and distribution systems." Given the OEB's successful experience with gas deregulation and the need for near term and sustained rate relief, the OEB is in an excellent position to provide guidance on "new and innovative approaches" to solving the immediate problems facing the electricity industry in Ontario.

SUMMARY OF RECOMMENDATIONS RELATING TO THE PROPOSED REVENUE REQUIREMENT

1. **Energy Probe recommends that the principle of user-pay be applied to all conservation programs, which should only be offered on a non-subsidized basis. The 1993 revenue requirement should therefore be decreased by at least the full amount of the DSM OM&A budget in 1993 or $117.4 million (Main Submission, Table 3-2) plus the 1993 capital charged to 1993 rates.** [Energy Probe Argument page 13]

2. **Energy Probe recommends that no new bad debts be incurred to pay for conservation program costs. The $231 of existing bad debt accumulated to the end of 1992 should be written off over the next three years, raising the revenue requirement in those years of about $77 each year.** [14]

6. **Energy Probe recommends that Ontario Hydro abandon its *Financial Assistance Program*, save the $5.6M in 1993, and institute instead proper power purchase rates based on incremental avoided costs.** [24]

9. **Energy Probe recommends that the NUG Division be scaled down in proportion to short-term NUG results, and that it justify past expenditures before new expenses are undertaken.** [31]

20. **Energy Probe recommends that 1993 rates be increased to accommodate a reasonably foreseeable 5 TWh drop in nuclear production relative to the current forecast. The required adjustment to net income is approximately $69 million or about 0.8% on 1993 rates based on the sensitivities in the Main Exhibit Table A5-1.** [59]

30. **Energy Probe recommends $14 million dollars of depreciation provision be included in the revenue requirement for low level and intermediate level radioactive waste disposal.** [81]

31. **Energy Probe recommends that net income be adjusted to ensure coverage of the SDR without use of the rate stabilization reserve.** [84]

OTHER RECOMMENDATIONS

3. Energy Probe recommends that institutionally created conservation market failures caused by flat-rate water heaters, bulk meters and declining block rates be eliminated. [14]

4. Energy Probe recommends that Ontario Hydro develop the capability to estimate and eliminate free-ridership in its NUG Programs, and report to the Board on its progress at HR22. [19]

5. Energy Probe recommends that Ontario Hydro not renew the *Consultant Study Assistance Program* as it now exists, and that the program be replaced with one based on user-pay principles. [19]

7. Energy Probe recommends that Ontario Hydro remove its 10% adder for renewable energy and efficient NUGS, since its objectives could be achieved through rate reform, and its practice is counterproductive to rate reform. [27]

8. Energy Probe recommends that Ontario Hydro's NUG policies be revised to reflect the utility's position that hydraulic power is not necessarily a clean energy source. [30]

10. Given the inherent cost benefits to Load Displacement NUG participants and the Corporation's dire need to reduce expenditures, Energy Probe recommends that all financial assistance to Load Displacement NUGs be terminated. Ontario Hydro subsidization of this buoyant and dynamic industry is inappropriate. [33]

11. Energy Probe recommends that the municipal electrics' right of first refusal be reinstated, and that Ontario Hydro make a standing offer to the municipal electrics' to forgo its right of exclusive supply. Given the enormous cost of Ontario Hydro power and the municipal electrics' obligation to provide their customers with low cost power, it is only fair to allow them the right to shop around. [37]

12. Energy Probe recommends that the review between Ontario Hydro and the Municipal Electrics over direct purchases be linked to a larger hearing on power wheeling. At the very least, the review should be public: the potential for ratepayer benefits is too great to leave this to the Hydro family to decide. [37]

13. Energy Probe recommends that Ontario Hydro restructure its rates for 1993 to unbundle electricity services and reflect full financial marginal costs so that wheeling can be accommodated without causing development of unnecessary private power projects. [55]

14. Energy Probe recommends that Ontario Hydro cut its costs, particularly discretionary and non-productive expenditures of all kinds (such as wasteful, non-income-generating DSM costs; advertising; non-core research costs; and corporate overhead). [55]

15. Energy Probe recommends that Ontario Hydro manage the remaining productive areas of its operation to greatly enhance productivity per dollar of expenditure including staff cuts and salary roll-backs. More than any management audit (like the cumbersome CRESAP process), sure knowledge that its survival is at stake will make Hydro find ways to become leaner. [55]

16. Energy Probe recommends that Ontario Hydro begin to decrease its debts. [55]

17. Energy Probe recommends that the Minister of Energy recognize that further expansion of Hydro's debt may expand the government's liabilities. [55]

18. Energy Probe recommends to the Minister that an immediate reference be given to the Ontario Energy Board to examine the implementation of wheeling services on a non-prejudicial but for-profit basis, and the possibility of restructuring Ontario Hydro's debt to allow the grid to continue to operate should Ontario Hydro be forced to default on its financial obligations. [55]

19. Energy Probe recommends that the OEB indicate to the Minister that Hydro's forecasting of nuclear production continues to be unreliable. [59]

21. Energy Probe recommends that lifetime production estimates for purposes such as spent fuel disposal and decommissioning be based on objectively verifiable regression analysis rather than judgment-ridden and target-tainted forecasts. [62]

22. Energy Probe recommends that Darlington units 3 and 4 not be started until units 1 and 2 demonstrate sustained good operations over at least a period of two months. [70]

23. Energy Probe recommends that Hydro adopt a standard format in its Corporate Performance Reports to facilitate analysis, that future reports graph year-to-year changes, and that innovations, improvements, or further analysis required by Hydro in its Corporate Performance Reports be accomplished without affecting the integrity of the comparison function, perhaps through supplementary or parallel questions, rather than through minor year-to-year adaptations. [72]

24. Energy Probe recommends that Hydro's Planning Reference provide more meaningful electricity price comparisons, including: all U.S. utility customers; all U.S. private utility

customers; all U.S. public utility customers; all Canadian utility customers; all Canadian private utility customers; all Canadian public utility customers. [73]

25. **Energy Probe recommends that whenever Hydro uses a reference group or a composite, rather than comprehensive data, it should explain its rationale whenever the rationale behind the selection is not evident. [73]**

26. **Energy Probe recommends that Hydro's operations be recognized as a closely-held arm of government, rather than operating at arm's length from government, and that executive and non-executive compensation be brought in line with that paid civil servants performing comparable tasks. [76]**

27. **Energy Probe recommends that Hydro explore incentive systems that have a demonstrated record of success in government-run business environments in other western jurisdictions. [76]**

28. **Energy Probe recommends that Ontario Hydro ensure that the salary of the Ontario Hydro employee now seconded to the CNA [6.8.57] is no longer paid by Ontario Hydro, as was the case at the time of the HR20 rate review [HR20 6.3.0]. [77]**

29. **Energy Probe recommends that Hydro review the reasons for premature nuclear shutdowns wherever they have occurred in the world. Hydro should present a cumulative review as part of its HR22 depreciation evidence, and present annual updates to that information as part of its depreciation evidence in subsequent hearings. [80]**

II. ECONOMIC OUTLOOK AND LOAD FORECAST

Energy Probe has no comments on this chapter.

III. ENERGY MANAGEMENT

Ontario Hydro's conservation programs are economically illogical, wasteful on a grand scale, rate increasing, and vulnerable to manipulation in Hydro's corporate self interest. While hundreds of millions of dollars in subsidies are expended on profligate schemes, a number of economically justifiable conservation options are delayed or ignored.

The fundamental justification underlying Hydro's conservation programs — that Hydro is a better investor in energy using devices than its customers, who therefore should be forced to delegate energy investments to Hydro — is unfounded. Ontario Hydro has little credibility as an energy investment adviser in areas in which it is experienced and even less in those areas in which it lacks expertise. Hydro can only operate its conservation programs and force its investment choice on customers because Hydro can tax its captive customers, not because Hydro has demonstrated special ability.

Ontario Hydro is unduly trustful of the assumption-laden total Customer Cost Test for DSM and should rely instead on market evidence of cost effectiveness.

Hydro believes that its programs are cost effective and will eventually reduce rates relative to what they would otherwise be. In the meantime, the programs are increasing rates. Current rate payers should not be forced to pay for benefits that accrue to later customers.

In delivering DSM services, Hydro should focus on keeping rates low, offering conservation services on at least a "conservation-at-cost" basis (preferably conservation-for-profit), and allowing customers to decide for themselves how to derive most benefit from electricity services. Spending more on efficiency improvements than is economically justifiable carries with it the risk of losing public support for conservation.

The need for cross-subsidies in Ontario Hydro's DSM programs indicates a lack of cost-effectiveness. The principle that Hydro should uphold is one of user-pay — no customer should have to pay another customer's costs.

- **Energy Probe recommends that the principle of user-pay be applied to all conservation programs, which should only be offered on a non-subsidized basis. The 1993 revenue requirement should therefore be decreased by at least full amount of the DSM OM&A budget in 1993 or $117.4 million (Main Submission, Table 3-2) plus the 1993 capital charged to 1993 rates.**

In a time of capacity surplus, Hydro is paying customers to not use electricity, for a ratepayer cost over the period 1992 through 1995 of $1.925 billion.

By capitalizing conservation program costs, Hydro is in effect deliberately taking on bad debts. Hydro indicates that by the end of 1992 Hydro will have accumulated $231 million of debt to pay for DSM program costs and by 1993, if Hydro continues as planned, it will have taken on approximately $440 million of debt attributed to DSM costs. Almost none of this money will be secured by assets with any revenue-generating power or resale value. If Hydro insists on giving away programs, the utility should at least not take on debts in the process, but should expense the costs of any "gifts" it gives.

- **Energy Probe recommends that no new bad debts be incurred to pay for conservation program costs. The $231 of existing bad debt accumulated to the end**

of 1992 should be written off over the next three years, raising the revenue requirement in those years of about $77 each year.

Hydro repeatedly asserts that the purpose of an incentive in a DSM program is to overcome a market barrier or failure, or to make promotional messages more effective. Energy Probe is concerned that these market barriers may often be an expression of the undesirability of particular options for reasons of cost, amenity value loss, or other good reasons. Tritium-powered exit signs are an example of a technology whose low market penetration may measure the good sense of potential consumers, and not the failure of the market.

Ontario Hydro could eliminate the conservation market failures caused by flat-rate water heaters, bulk metering, and declining block rates using existing regulatory authority. More than twelve years ago, the Porter Commission recommended such changes which have still not been implemented, yet are ideally suited to utility action.

- **Energy Probe recommends that institutionally created conservation market failures caused by flat-rate water heaters, bulk meters and declining block rates be eliminated.**

IV. NON-UTILITY GENERATION

Non-Utility Generation is extremely attractive as an energy option for Ontario. NUG projects tend to be less environmentally damaging than conventional supply options, and should have economic benefits to the ratepayer and provincial economy due to shorter construction lead times, improved efficiency relative to Ontario Hydro facilities, and eventually more efficient allocation of resources due to the development of competitive forces in the generation market.

However, Energy Probe has concerns with Hydro's approach to NUG development and purchase, which exhibits both inappropriately generous subsidization and heavy-handed application of monopoly power.

Under the *Consultant Feasibility Assistance Program*, Ontario Hydro contributed 50% of the consultant's fees for participating NUGs. The consultant costs paid to the NUG developer by Ontario Hydro are not repayable, but if the NUG developer, rather than Ontario Hydro, paid consultant fees, the developer would absorb the costs, helping to prevent uneconomic programs from proceeding, and protecting ratepayers.

As it is, the *Consultant Feasibility Assistance Program* may have been over-utilized because it was free: just 30% of the potential projects that took advantage of the program actually proceeded to the committed or in-service stage. Ontario Hydro not estimate free-ridership in its NUG programs: given the alarmingly high free-ridership levels estimated for Demand Management programs — up to 53% — it should do so.

Likewise, Ontario Hydro has not calculated what proportion of NUGs would not have become available were it not for the NUG *Financial Assistance Program*, yet estimates zero percent free-ridership. This is consistent with Ontario Hydro's unsubstantiated and indefensible belief that practically all NUG developments are "program driven", as opposed to occurring without Hydro's help.

Load Displacement NUGs should not need *Consultant Study Assistance* since they benefit enough as it is through the cost reduction that results from getting off the Ontario Hydro system. Although Ontario Hydro said its intervention was intended to make customers competitive, Energy Probe submits that Ontario Hydro knows little about competitiveness or cheap power, and that if Load Displacement is really economic, developers will make investments on their own.

- **Energy Probe recommends that Ontario Hydro develop the capability to estimate and eliminate free-ridership in its NUG Programs, and report to the Board on its progress at HR22.**

- **Energy Probe recommends that Ontario Hydro not renew the *Consultant Study Assistance Program* as it now exists, and that the program be replaced with one based on user-pay principles.**

Since the *Financial Assistance Program* is usually used for projects over 5MW and Ontario Hydro is not intending to buy any Purchase NUGs over 5MW, Purchase NUGs' use of the *Financial Assistance Program* should be dropping to practically nothing.

Ontario Hydro says Load Displacement NUGs need financial assistance particularly, and that such assistance is an important mechanism for the sharing of Ontario Hydro's benefits with the Load Displacement NUG. But Load Displacement participants' power costs decrease with the adoption of load displacement capability, and given the degree to which Load Displacement NUGs exacerbate utilities' power surplus, the Load Displacement NUG developer is at this time benefiting more than is Ontario Hydro

- **Energy Probe recommends that Ontario Hydro abandon its *Financial Assistance Program*, save the $5.6M in 1993, and institute instead proper power purchase rates based on incremental avoided costs.**

Ontario Hydro continues to offer up to a 10% rate premium to encourage new NUG projects to use renewable resources and high efficiency conversion technology. But given Ontario Hydro's October 1991 restrictions on NUGs, that "encouragement" is less necessary now than it ever was: Ontario Hydro will now buy no NUG power but that which uses either renewable resources or high efficiency conversion technology. Ratepayers are now being charged up to 10% extra for all new NUG power, and Ontario

Hydro has no direct evidence that projects using preferred generation would not have come on-line without the premium.

Paying a premium for renewable energy will artificially raise rates for consumers, and create the impression that renewable energy is uneconomic. This could erode support for renewable energy, while sending misleading signals to the market. Were the environmental and social costs of generation internalized, dirty power would almost invariably be more costly than clean energy, yet Ontario Hydro's premium does not reflect this.

In an economic dispatch system, which Ontario Hydro now operates for its own generation and is considering for NUGs, the perverse effects of the preference premium would come to light. Priced 10% higher than real costs, the renewable and efficient NUGs that Ontario Hydro in theory prefers might in fact be hobbled by the adder and unable to compete against conventional utility and NUG generation.

Neither are Ontario Hydro's other methods for encouraging renewable NUGs appropriate, honest or effective.

Given that Ontario Hydro has no authority to prevent Load Displacement generation, its characterization of its "acceptance" of Load Displacement NUGs as evidence of its commitment to renewable energy is misleading.

Ontario Hydro also submitted its promotion of hydraulic power as evidence of the utility's dedication to "clean" power development. However, Ontario Hydro agreed that hydraulic development can have severe environmental impacts, and although the environmental impacts of hydraulic development vary with factors such as project size, dam technology and the amount of land flooded, the preference premium makes no such distinction. There is nothing in Hydro's NUG polices to prevent environmentally damaging hydraulic developments from receiving the environmental preference premium.

Ontario Hydro's dedication of resources to the *Alternate Energy Program* is inappropriate. Ontario Hydro has never undertaken design or pre-engineering work on alternate energy technology and has no particular expertise in the area.

Although Ontario Hydro is restricting NUG development to projects meeting a very rigid and specific set of environmental criteria, the utility has not itself complied with such standards. Other than conventional hydraulic, Ontario Hydro does not have plans to build "preferred generation", and none of Ontario Hydro's existing thermal stations would meet the high efficiency conversion heat rate test that the utility applies to NUGs.

- **Energy Probe recommends that Ontario Hydro remove its 10% adder for renewable energy and efficient NUGS, since its objectives could be achieved through rate reform, and its practice is counterproductive to rate reform.**

- **Energy Probe recommends that Ontario Hydro's NUG policies be revised to reflect the utility's position that hydraulic power is not necessarily a clean energy source.**

Although the NUG Division is now planning to get less new NUG capacity in the short term, staff size and capital expenditure is budgeted to increase significantly from its 1991 level, and seems an obvious target for cost-cutting. That Ontario Hydro is finally able to estimate how many NUG projects took advantage of its programs is neither impressive nor reassuring. Without free-ridership estimates we still do not know what NUGs would not have come on-line without the NUG Division's intervention.

- **Energy Probe recommends that the NUG Division be scaled down in proportion to short-term NUG results, and that it justify past expenditures before new expenses are undertaken.**

Although again and again Ontario Hydro testified that the benefit of Load Displacement generation for the customer is increased competitiveness due to decreased power costs, Hydro continues to actively fund Load Displacement generation as if it would be uneconomic otherwise. Although Ontario Hydro recognizes that rate increases prompt customers to self-generate without Ontario Hydro's encouragement, the utility has done no analysis an whether there is a threshold at which natural Load Displacement generation makes NUG incentives unnecessary.

- **Given the inherent cost benefits to Load Displacement NUG participants and the Corporation's dire need to reduce expenditures, Energy Probe recommends that all financial assistance to Load Displacement NUGs be terminated. Ontario Hydro subsidization of this buoyant and dynamic industry is inappropriate.**

In other instances, Ontario Hydro is discouraging NUG development in a very heavy-handed manner. Ontario Hydro's anti-competitive actions against NUGs are an abuse of monopoly power, and its rationale for these actions are inconsistent with its subsidization of Load Displacement NUG projects.

When Ontario Hydro first became interested in purchasing independent power, it recognized that municipal utility participation would encourage NUG development and so it offered the right of first-refusal on NUG project proposals in their area. This makes no less sense just because there is now a larger NUG forecast than Ontario Hydro anticipated — if anything, larger volumes of NUG purchases might be better facilitated by having local people involved in securing contracts.

However, Ontario Hydro has withdrawn the policy on the grounds that "it is inappropriate for one utility to have the advantage of lower cost power from a non-utility generator within its service area when this decreases the rates of [the participating] Municipal Electric Utilities and results in higher rates for the other utilities and ratepayers in Ontario". Larger volumes of NUG power do exacerbate this effect, but to simply shut the competition out is inappropriate. The proper Ontario Hydro reaction would be to cease NUG subsidies and to compete by cutting its own costs.

The tendency of private sector projects to off-load the risk of cost increases from the ratepayer and the utility, often cited by Ontario Hydro as an important advantage of NUGs, is no less important to the municipal electric customer than to the Ontario Hydro customer. Yet Hydro forbids purchases and encourages self-generation, depriving customers of rate benefits. There is no legal barrier to restoring the Municipal Right of First Refusal. It may be that Ontario Hydro is protecting its monopoly more than it protects its customers.

- **Energy Probe recommends that the municipal electrics' right of first refusal be reinstated, and that Ontario Hydro make a standing offer to the municipal electrics to forgo its right of exclusive supply. Given the enormous cost of Ontario Hydro power and the municipal electrics' obligation to provide their customers with low cost power, it is only fair to allow them the right to shop around.**

- **Energy Probe recommends that the review between Ontario Hydro and the Municipal Electrics over direct purchases be linked to a larger hearing on power wheeling. At the very least, the review should be public: the potential for ratepayer benefits is too great to leave this to the Hydro family to decide.**

Wheeling is the transmission of power from a third party producer to consumers over the central utility grid. It is based on three principles: that power generation is not a natural monopoly, so there can be many generators running individual plants; that the electricity grid is a natural monopoly; and that opening access to the transmission system facilitates competition and efficiency in the electricity business. A fourth principle, vital to an effective and efficient wheeling regime, is "third party access" or TPA, which recognizes the pivotal importance of the central dispatch process. Under TPA, all generating units have equal access to the central dispatch process, allowing non-utility generators to compete on equal terms with the monopoly's generating units. In an expanded wheeling system without third party access to the dispatch process, consumers will be denied the rate benefits of true competition in electricity sales, and the grid will not operate safely, reliably, or efficiently.

An open wheeling policy, designed to optimize economic efficiency, is very strongly in the public interest. Rates would drop and the environment would be protected [Energy Probe Argument pages 39-43], yet Ontario Hydro is blocking its development, despite past advice from the Ontario Energy Board.

All of Ontario Hydro's objections are an artifact of Hydro's institutional structure and could be overcome if it were the utility's desire. The degree to which consumers realize wheeling's benefits depends entirely upon the manner of implementation.

Particularly important is giving third parties access to the dispatch process and not just to the transmission lines. The central dispatch system gives consumers an alternative to paying Ontario Hydro's prices. If Hydro makes NUGs compete among themselves to sell power to Hydro, but the utility does not itself compete with NUG power, Hydro is not threatened. But in a TPA system, Ontario Hydro is subject to financial risk and must act accordingly. To the benefit of the NUG industry, central dispatch creates a level playing field with central generation, reducing the risk and increasing the attractiveness of wheeling.

Equally important is the unbundling of rates to reflect the incremental cost of the various electricity services. Redesigning rates on user-pay principles and unbundling rates are steps certain to benefit consumers with or without TPA, although without them the irrationality of present pricing practices may not be exposed.

A vital role in the implementation of TPA will be played by the technical teams who will define the terms on which TPA will be allowed, and will consider the matter of Ontario Hydro's debt.

There are no serious technical obstacles to implementing third party wheeling in Ontario. Rather, the principal problems are institutional, in particular Ontario Hydro's opposition to change and its current costs and rate structures, which appear to be uncompetitive.

Restraining Hydro's monopoly-abusive practices and rationalizing Hydro's distorted prices are the barriers to be overcome before the public can enjoy the sweet and now-forbidden fruits of power wheeling. This is a challenge requiring the ability to consider Ontario Hydro's problems in a fundamentally different way, of which the utility has so far been incapable, and so the Energy Board must take the lead on this important issue.

The Ontario Energy Board possesses the necessary mandate and expertise to further examine the rate impacts of third party wheeling and as such is uniquely qualified to continue the review of this issue and arrive at definitive conclusions and recommendations.

As Energy Probe's evidence on wheeling is illustrative and not definitive, there remains the need to allow interested parties the opportunity to further examine wheeling's rate implications. While the iterative nature of the rate hearing allows the Board to continue to acquire expertise in wheeling and to facilitate and monitor its implementation over the years, a special reference hearing on this issue is justified. In the meantime however, there are several "no regrets" actions that can be taken now.

- **Energy Probe recommends that Ontario Hydro restructure its rates for 1993 to unbundle electricity services and reflect full financial marginal costs so that wheeling can be accommodated without causing development of unnecessary private power projects;**

- **Energy Probe recommends that Ontario Hydro cut its costs, particularly discretionary and non-productive expenditures of all kinds (such as wasteful, non-income-generating DSM costs; advertising; non-core research costs; and corporate overhead);**

- **Energy Probe recommends that Ontario Hydro manage the remaining productive areas of its operation to greatly enhance productivity per dollar of expenditure including staff cuts and salary roll-backs. More than any management audit (like the cumbersome CRESAP process), sure knowledge that its survival is at stake will make Hydro find ways to become leaner;**

- **Energy Probe recommends that Ontario Hydro begin to decrease its debts;**

- **Energy Probe recommends that the Minister of Energy recognize that further expansion of Hydro's debt may expand the government's liabilities; and**

- **Energy Probe recommends to the Minister that an immediate reference be given to the Ontario Energy Board to examine the implementation of wheeling services on a non-prejudicial but for-profit basis, and the possibility of restructuring Ontario Hydro's debt to allow the grid to continue to operate should Ontario Hydro be forced to default on its financial obligations.**

If the OEB's recommendations at HR16 had been implemented, the province and its citizens wouldn't be staring at the disaster now facing them. The financial implications for Ontario Hydro are alarming, but they will be worse at HR24 if we don't get on with it and implement wheeling. The implications for power consumers are appealing, and in the words of Ontario Hydro's Mr. William Palmer, "major improvement can only be achieved by major change".

V. FUEL AND FUEL RELATED

Ontario Hydro's evidence indicates continuing poor prospects for nuclear production and corresponding upward pressure on fuel and other costs.

Hydro indicated that its nuclear capability factor in 1992 is expected to be only 63%, its worst year yet. In general, Hydro has been unsuccessful in restoring its nuclear program to good operations.

Ontario Hydro's forecasts of nuclear performance have been overly optimistic for ten years in a row. Given Hydro's track record with forecasting, and realistically reflecting uncertainties in Darlington and the rest of the nuclear system, the Board should prudently assume that 1993 production will be at least 5 TWh below forecast.

- **Energy Probe recommends that the OEB indicate to the Minister that Hydro's forecasting of nuclear production continues to be unreliable.**

- **Energy Probe recommends that 1993 rates be increased to accommodate a reasonably foreseeable 5 TWh drop in nuclear production relative to the current forecast. The required adjustment to net income is approximately $69 million or about 0.8% on 1993 rates based on the sensitivities in the Main Exhibit Table A5-1.**

The Board should have no confidence in Hydro's forecasted nuclear production "confidence bounds". It is reasonable to expect that new "unanticipated" problems, not yet part of Hydro's outage forecast, will arise to limit nuclear output.

Hydro's nuclear forecasting might be fairly characterized as hope-driven. As recently as HR19 Hydro was forecasting a radical turnaround in nuclear productivity.

At HR20 Energy Probe urged the Board to recommend that for financial planning and accounting purposes, Hydro use a historically-grounded performance projection based on multivariant regression like that put forward by Energy Probe. One of the benefits of regression analysis is that, should Hydro be able to demonstrate (as opposed to prognosticate) improved production, then the analysis will reflect those results.

- **Energy Probe recommends that lifetime production estimates for purposes such as spent fuel disposal and decommissioning be based on objectively verifiable regression analysis rather than judgment-ridden and target-tainted forecasts.**

Darlington remains a monumental headache, suffering from cost overruns, construction delays, bad engineering, massive rate impacts, and production uncertainty.

Darlington units 1 and 2 have been commissioned and so are radioactive, but are inoperative. In Energy Probe's view it would be irresponsible to make further units radioactive without first proving, at the very least, by sustained good operations that the already radioactive units are capable of functioning properly.

- **Energy Probe recommends that Darlington units 3 and 4 not be started until units 1 and 2 demonstrate sustained good operations over at least a period of two months.**

VI. OM&A AND CAPITAL

Ontario Hydro has changed the presentation of its Corporate Performance Report Card in various ways, making year-to-year comparisons difficult. As a result, neither Hydro nor the public have consistent and accessible benchmarks by which to compare Hydro's performance from year to year, undermining the value of this aspect of the Reports' functions.

- **Energy Probe recommends that Hydro adopt a standard format in its Corporate Performance Reports to facilitate analysis, that future reports graph year-to-year changes, and that innovations, improvements, or further analysis required by Hydro in its Corporate Performance Reports be accomplished without affecting the integrity of the comparison function, perhaps through supplementary or parallel questions, rather than through minor year-to-year adaptations.**

- **Energy Probe recommends that Hydro's Planning Reference provide more meaningful electricity price comparisons, including: all U.S. utility customers; all U.S. private utility customers; all U.S. public utility customers; all Canadian utility customers; all Canadian private utility customers; all Canadian public utility customers.**

- **Energy Probe recommends that whenever Hydro uses a reference group or a composite, rather than comprehensive data, it should explain its rationale whenever the rationale behind the selection is not evident.**

From Hydro's 1991 Corporate Reports, it appears that Hydro has made little or no progress (and sometimes has lost further ground) in the 1991 year over the 1990 year in many important areas. Power prices — the primary cause of customer dissatisfaction (cited by two-thirds of dissatisfied business customers and three-quarters of dissatisfied residential customers — continue to rise well above inflation, and the price gap between Ontario consumers and those in the U.S. continues to narrow.

Ontario Hydro's own Utility Reference Group manages 33% more capacity per payroll dollar spent than does Ontario Hydro, and generates almost twice as much revenue per payroll dollar spent than does Ontario Hydro.

The poor productivity of Hydro's staff implies that the Corporation is not getting value for money from its personnel, a reflection both on the Corporation's management practices and the motivation of the rank and file. This poor productivity lends great weight to Board Staff's evidence regarding the importance of incentive systems in executive compensation, and — by implication — the importance of incentive systems in all-employee compensation.

Hydro's executive compensation appears to be both too high and too low: too high, because relative to performance the executives are overpaid, and have too much security, more resembling civil servants than business professionals; too low because, in a normal business environment, managing an $8 billion-in-sales enterprise should command extraordinarily skilled individuals demanding commensurate compensation.

The passage of Bill 118 — which makes Hydro legally subordinate to prevailing government directives, effectively giving the government policy direction over the Corporation — has brought Hydro even more into the government's orbit. Executive salaries should therefore be brought into line with those of civil servants, as Hydro now more than ever must operate in a government environment, and be able to attract and keep executives skilled and suited to this quasi-business environment.

- **Energy Probe recommends that Hydro's operations be recognized as a closely-held arm of government, rather than operating at arm's length from government, and that executive and non-executive compensation be brought in line with that paid civil servants performing comparable tasks.**

- **Energy Probe recommends that Hydro explore incentive systems that have a demonstrated record of success in government-run business environments in other western jurisdictions.**

Ontario Hydro's announcement of the Corporation's withdrawal from membership in the Canadian Nuclear Association is a good indication of the importance and effectiveness of the Ontario Energy Board's public accountability role. It is established accounting policy to review seemingly minor expenditures to screen for indicators of larger accountability problems, and Energy Probe recommends that the Board continue this important function.

- **Energy Probe recommends that Ontario Hydro ensure that the salary of the Ontario Hydro employee now seconded to the CNA [6.8.57] is no longer paid by Ontario Hydro, as was the case at the time of the HR20 rate review [HR20 6.3.0].**

VII. DEPRECIATION

The Depreciation Review Committee should have an interest in knowing why premature nuclear shutdowns are occurring around the world, yet does not. Energy Probe believes it would be useful to the Board to have before it evidence from Hydro on the reasons for premature nuclear shutdowns in other jurisdictions. This information could provide a context for Hydro's own depreciation decisions. Those at Hydro charged with making depreciation decisions should extend their attention beyond narrow technical judgments and also consider the economic, safety, and regulatory reasons which are causing a host of premature nuclear shutdowns around the world.

- **Energy Probe recommends that Hydro review the reasons for premature nuclear shutdowns wherever they have occurred in the world. Hydro should present a cumulative review as part of its HR22 depreciation evidence, and present annual updates to that information as part of its depreciation evidence in subsequent hearings.**

Assurances from the utility of the cost-effectiveness of repair of Bruce A units, which justify maintaining the assumed 40-year service life for depreciation purposes, may be no more reliable than Hydro's nuclear production forecasts. Hydro's institutionalstructure does not lend itself to responsible decision making. No amount of regulatory oversight can reproduce the decision making environment which prevails when investors are responsible for their own investments.

Third Party Access and the right of customers to make contracts with producers of their choice might herald a more responsible decision making environment. Hydro has never recovered a depreciation provision for low and intermediate level waste and should not put off doing so any longer.

- **Energy Probe recommends $14 million dollars of depreciation provision be included in the revenue requirement for low level and intermediate level radioactive waste disposal.**

VIII. BORROWING, INTEREST AND FOREIGN EXCHANGE EXPENSE

Energy Probe has no comments on this chapter.

IX. NET INCOME

Hydro is clearly in dire financial condition, and acknowledged that four more years of financial results identical to those forecast for 1993 would wipe out its rate stabilization reserve. The nominal reserve level by the end of 1993 will be lower than at any time since before 1984.

The only sensible use of the reserve would be to achieve rate smoothing if Hydro's problems were about to be solved and there were future prospects for declining rates. Energy Probe submits that, given the status quo, in the near term there is little likelihood of rate decrease. Therefore the OEB should recommend against continued use of the reserve, and net income should be adjusted to ensure at minimum coverage of the Statutory Debt Retirement amount.

- **Energy Probe recommends that net income be adjusted to ensure coverage of the SDR without use of the rate stabilization reserve.**

X. PROPOSED RATES

Energy Probe has not made a specific recommendation regarding Ontario Hydro's proposed rate increase for 1993.

For recommendations regarding rate structure, please refer to the list below:

3. **Energy Probe recommends that institutionally created conservation market failures caused by flat-rate water heaters, bulk meters and declining block rates be eliminated.** [Energy Probe Final Argument page 14]

7. **Energy Probe recommends that Ontario Hydro remove its 10% adder for renewable energy and efficient NUGS, since its objectives could be achieved through rate reform, and its practice is counterproductive to rate reform.** [27]

13. **Energy Probe recommends that Ontario Hydro restructure its rates for 1993 to unbundle electricity services and reflect full financial marginal costs so that wheeling can be accommodated without causing development of unnecessary private power projects.** [55]

XI. EXECUTIVE COMPENSATION

Please refer to Energy Probe's submissions in Chapter Six.

All of which is respectfully submitted

Mark O. Mattson, counsel to Energy Probe

July 14, 1992

EXECUTIVE SUMMARY OF MEA

1. INTRODUCTION

1.1 The M.E.A.'s HR 21 Argument

The purpose of this document is to provide the Ontario Energy Board (OEB) with a summary of the arguments of the Municipal Electric Association (M.E.A.) on issues relevant to the bulk electricity rate increase proposed by Ontario Hydro for 1993. The argument follows the order of the chapters in the Main Submission.

In reading the M.E.A.'s argument, it is important to keep in mind that all financial impacts are computed relative to Ontario Hydro's original proposal as filed with the OEB on April 1, 1992. The M.E.A.'s final recommendation includes the impact of Ontario Hydro's own updates filed subsequent to the Main Submission. A summary of the impacts of the M.E.A.'s recommendations on the 1993 revenue requirement can be found in the attached tables extracted from the M.E.A.'s Final Argument filed July 9, 1992.

> **The M.E.A. is recommending an average bulk electricity rate increase of 7.6 per cent for 1993. This is consistent with the position taken by the M.E.A. over the many years in these rate hearings that Ontario Hydro should give primary weight to financial soundness. An average rate increase of 7.6 per cent for 1993, combined with budget cuts in OM&A and Energy Management, an increased load forecast, a lower interest rate forecast, and acceptance of the alternate in-service and return-to-service dates for Darlington, will allow Ontario Hydro to set its net income level for 1993 to meet the statutory debt retirement requirement.**

1.2 Ontario Hydro's Rate Proposal

Ontario Hydro is proposing to increase electricity rates by an average of 8.6 per cent. Rates to municipal utilities and direct customers would increase by 9.1 per cent.

According to Ontario Hydro the principal factor contributing to the 8.6 per cent rate increase is the Darlington generating station, to which is attributed about 75 per cent of the rate increase. Other contributing factors include rehabilitation, non-utility generation (NUG) and other facilities placed in service.

Over the course of the hearings Ontario Hydro announced updates that would reduce net income in 1993 by $49 million (Ex. 1.1.4, June 30, 1992, p. 2). An average all-customer rate increase of 9.2 per cent would be required in 1993 to make up this loss.

The main components of Ontario Hydro's revenue requirement are the costs associated with operations, maintenance and administration (OM&A); fuel costs; interest and foreign exchange costs; depreciation expense; net income; and provincial government levies.

II. ECONOMICS AND LOAD FORECASTS

Load growth is forecast by Ontario Hydro to be 2.1 per cent in 1992 and 2.6 per cent in 1993. The M.E.A. recommends adjusting the 1993 load growth forecast upward to 3.6 per cent. The accuracy of Ontario Hydro forecasts of economic variables in recent years has compared favourably to those of other major forecasters. However, consideration should be given to assessing the effect of price expectation on electricity demand.

RECOMMENDATIONS:

2.1 Economic Forecast

1. Ontario Hydro's updated forecasts of GDP, CPI and exchange rates should be accepted. The forecast of interest rates should be lowered by three-quarters of one per cent.

The impact of this recommendation is to reduce the revenue requirement for 1993 by $2 million.

2.2 Load Forecast

1. Ontario Hydro's updated forecast of load for 1993 should be increased from 2.6 per cent to 3.6 per cent.
2. Ontario Hydro should endeavour to incorporate the effects of price expectations on electricity demand in its forecasting models.

The impact of these recommendations is to decrease the revenue requirement for 1993 by $7 million dollars.

III. ENERGY MANAGEMENT

Ontario Hydro has recently undertaken a major initiative in the field of demand management. The M.E.A. is concerned that Ontario Hydro's method of reporting results does not permit a proper examination of the success of its demand management activities. Ontario Hydro must also substantially improve and accelerate its efforts in monitoring and impact evaluation.

In response to the evidence of poor cost effectiveness and the projected capacity surplus, a refocusing of Ontario Hydro's demand management programs is required. Financial incentives should be restricted and specifically excluded from any fuel substitution programs. Furthermore, no programs to induce fuel substitution should be undertaken until a complete economic analysis, including the marginal costs of alternate fuels, is completed.

RECOMMENDATIONS:

3.1 Reporting of Results

1. Ontario Hydro should present demand management results net of free riders and report both capacity and energy savings.

3.2 Monitoring and Evaluation

1. Ontario Hydro should proceed expeditiously to finalize and implement its monitoring and evaluation functions.

3.3 Program Design and Costs

1. Ontario Hydro should immediately undertake an assessment of its demand management programs in an effort to increase cost effectiveness.

2. Ontario Hydro should take full advantage of the capacity surplus situation in the design and implementation of DSM programs, give higher priority to programs that capture lost-opportunity resources and scale back those that induce discretionary investments.

3. Ontario Hydro should reduce its demand management expenditures in consideration of cost pressures and the present capacity surplus. The 1993 OM&A budget for the Energy Management Branch should be reduced by $25 million.

4. Ontario Hydro should endeavour to restrict the incentives paid to participants in demand management programs.

5. Ontario Hydro should undertake an analysis of whether appropriate levels of demand management savings are available to all customers.

The impact of this recommendation is to reduce the 1993 revenue requirement by $25 million.

3.4 Fuel Substitution

1. Ontario Hydro should not undertake any programs to induce fuel substitution, whether incentive-based or otherwise, until the marginal costs of other fuels are determined, and until all appropriate economic analysis has been completed.

3.5 Evidence of ADMIC Controls

1. The recommendations of Dr. Rhodes for increasing incentives for the Guaranteed Energy Performance Program and sub-metering should be rejected.

IV. NON-UTILITY GENERATION

Ontario Hydro's corporate strategy for non-utility generation (NUG) is to give preference to generation using renewable resources and high-efficiency energy conversion technology; to increase planning flexibility; to meet system requirements; to minimize rate impacts; and to support customer/industry initiatives. These can be conflicting goals, particularly as Ontario Hydro expects there will be surplus capacity for a number of years.

In response to the projected capacity surplus, Ontario Hydro has adopted an interim policy directed at the continued acquisition of preferred non-utility generation and minimizing the rate impact associated with uncontrolled NUG development. The review of the Demand/Supply Plan at the Environmental Assessment Board will guide Ontario Hydro in establishing its long-term NUG policies. The Municipal Electric Association supports most elements of Ontario Hydro's interim policy.

RECOMMENDATIONS:

4.1 Recent NUG Program Developments and Ontario Hydro's Interim Policy

1. Ontario Hydro's interim NUG policy should be accepted pending a decision from the Environmental Assessment Board on the Demand/Supply Plan.

2. Ontario Hydro should adopt criteria for special projects which focus on providing benefits to ratepayers.

3. Ontario Hydro should remove its avoided cost adder for preferred NUG projects.

4.2 Performance Measurement

1. Ontario Hydro's NUG Division should adopt performance measures which include the timing of additional projects relative to system needs and the cost paid for non-utility generation relative to avoided costs.

2. Ontario Hydro should develop a meaningful cost-effective evaluation measure for its financial assistance program.

3. Ontario Hydro should examine all in-service projects receiving financial assistance in order to properly measure the effectiveness of the financial assistance program.

4.3 IPPSO NUG Panel

1. The proposals put forward by Dr. Hamrin and Mr. Passmore to acquire more non-utility generation than proposed by Ontario Hydro's interim policy should be rejected.

4.4 Third-Party Wheeling and Third-Party Access

1. Dr. Ruff's proposal on the restructuring of the electricity industry in Ontario should be rejected at this time.

2. Ontario Hydro should not implement third-party wheeling.

3. Ontario Hydro should eliminate subsidies for NUG and institute competitive bidding for NUG supply.

4.5 Review of Municipal Electric Utility Right of First Refusal

1. Ontario Hydro should expedite the review of its municipal utility non-utility generation acquisition policy with the Municipal Electric Association and complete the analysis by the end of 1992.

V. FUEL AND FUEL-RELATED AND SECONDARY SALES

As Ontario Hydro's nuclear production grows to exceed 50 per cent of its total electricity production, attention must be critically focussed on the forecasts of nuclear capability factors which, over recent years, have been chronically over-optimistic. Ontario Hydro should be encouraged to continue with urgency its efforts to improve its forecasting of nuclear capability factors, and to focus on simpler modelling techniques than those with which it is currently experimenting. Ontario Hydro should also recognize the likelihood of further delays to Darlington in-service dates, which will increase the capital costs of Darlington by as much as $600 million and have the short-term impact of increasing net income by $176 million in 1993.

RECOMMENDATIONS:

5.1 Nuclear Capability Factors — Forecasting Methodology

1. Ontario Hydro should move quickly to improve its forecasting of nuclear capability factors.

2. In forecasting nuclear capability factors, Ontario Hydro should continue to pursue regression-based approaches as well as simplified probabilistic approaches.

5.2 Darlington In-Service and Return-to-Service Dates

1. For purposes of planning, Ontario Hydro should adopt the delayed in-service and return-to-service dates for the Darlington units.

The impact of this recommendation is to reduce the 1993 revenue requirement by $176 million.

5.3 Nuclear Capability Factors for 1993

1. Ontario Hydro's forecast of nuclear capability factors for 1993 should be accepted.

5.4 Fossil and Hydraulic Capability Factors for 1993

1. Ontario Hydro should revise downward the forecast capability factor for fossil generation for 1993.

5.5 Secondary Sales

1. Ontario Hydro's secondary sales forecast for 1993 should be reduced to 2.8 TWh.

5.6 Bruce Retubing

1. The record at HR 21 should not remain open for further evidence related to retubing at Bruce A.

5.7 Environmental Dispatch.

1. Ontario Hydro should not change its dispatch policy at this time.

VI. OM&A AND CAPITAL

Ontario Hydro Operations, Maintenance & Administration (OM&A) costs for 1993 are projected to be about $2.3 billion, which represents approximately one-quarter of Ontario Hydro's revenue requirement. Ontario Hydro proposes a nine per cent increase in OM&A for 1993. Wage levels at Ontario Hydro continue to be in excess of 10 per cent above those for comparable employees elsewhere. Recent agreements with Ontario Hydro's unions may make it even more difficult to control costs and staff levels. New approaches to cost control at Ontario Hydro are required, including direct and substantial reductions to the OM&A budget.

With respect to capital, among the significant capital assets of Ontario Hydro are its heavy water production facilities and associated heavy water inventory. Recent events highlight the need for Ontario Hydro to reassess its heavy water production plans and deal definitively with these assets.

RECOMMENDATIONS:

6.1 OM&A Budgets

1. Ontario Hydro should immediately move to cut OM&A costs in 1993 by 5 per cent. This should include substantial reductions in targeted staff levels.

2. Ontario Hydro should develop a comprehensive list of indicators to be used for establishing results floors. The list should include lead indicators of performance, particularly in the nuclear area.

The impact of these recommendations is to reduce revenue requirement for 1993 by $115 million.

6.2 External Management Audit

1. An external value-for-money audit of Ontario Hydro should be conducted.

6.3 Heavy Water Production

1. Ontario Hydro should undertake a formal review of the options available to it with respect to heavy water production, and report the findings of that review at HR 22.

VII. DEPRECIATION

Service lives of fixed assets, both assets already in service and new assets, are considered by the Depreciation Review Committee (DRC). The DRC also considers the appropriateness of provisions associated with future events, such as decommissioning and waste disposal, the costs for which are properly recoverable from the present generation of customers. The DRC released recommendations in February, 1992, which included an assessment of the implications of the Update to Ontario Hydro's Demand/Supply Plan (DSP). Ontario Hydro has deferred consideration of these recommendations of the DRC. The M.E.A. has concerns about Ontario Hydro's failure to adopt the DRC recommendations, as well as Ontario Hydro's failure to adopt the DRC's recommendation on radioactive waste disposal provisions.

RECOMMENDATIONS:

7.1 Deferral of Provision for Low- and Intermediate-Level Radioactive Waste Disposal

1. Ontario Hydro should include a provision for low- and intermediate-level radioactive waste disposal in the revenue requirement for 1993.

The impact of this recommendation is to increase the 1993 revenue requirement by $14 million.

7.2 Other Recommendations of the DRC

1. Ontario Hydro should make a final decision on the recommendations of the DRC pertaining to the impacts of the Demand/Supply Plan Update and report to this Board in connection therewith at HR 22.

VIII. BORROWING

Interest expense and foreign exchange together account for 38 per cent of the total revenue requirement. The development of performance measures for Ontario Hydro's borrowing strategies must be emphasized. Ontario Hydro should also reconsider the elements of its foreign exchange loss management policy that result in an unacceptable risk to net income.

RECOMMENDATIONS:

8.1 Borrowing Strategy

1. Ontario Hydro should continue its policy of protecting against capital availability and its policy of interest rate risk diversification.

2. Ontario Hydro should establish comprehensive performance measures for the Treasury Division.

8.2 Foreign Exchange Management

1. Ontario Hydro should review its selection criteria for setting the threshold level for net income loss exposure from foreign exchange and consider a more conservative approach to setting the threshold for 1994.

IX. NET INCOME & ACCOUNTING POLICY

Ontario Hydro is currently projecting that in 1993 it will be withdrawing significant amounts from its reserve for stabilization of rates and contingencies for the fourth consecutive year. Return to financial soundness has again been postponed. Financial forecasts at Ontario Hydro continue to display a consistently optimistic bias, despite the fact that the preponderance of financial risk in the coming years remains on the downside.

The accounting treatment of various costs and expenditures has a significant impact on the annual revenue requirement. Ontario Hydro has made a major change to its accounting policy for heavy water. The M.E.A. agrees with the change, with the exception of the amortization methodology. Regarding demand management expenditures, the M.E.A. continues to be concerned that inappropriate deferrals are being made.

RECOMMENDATIONS:

9.1 Financial Forecasting

1. Ontario Hydro must move towards a significantly more conservative approach to financial forecasting.

2. An outside agency should review Ontario Hydro's financial forecasting at the corporate level.

3. Ontario Hydro should significantly increase the use of contingencies in its financial planning.

9.2 Net Income Policy

1. Ontario Hydro's net income policy should be revised to give primary weight to financial soundness and protecting the corporation against adverse outcomes.

9.3 Net Income — Level for 1993

1. Ontario Hydro's net income for 1993 should be set at a level sufficient to meet SDR.

9.4 Accounting for Heavy Water

1. Ontario Hydro's proposed accounting treatment for heavy water should be accepted, except that Ontario Hydro should utilize straight-line amortization of the balance of costs in the heavy water for future use pool.

9.5 The Demand Management Service Life Review Committee

1. Ontario Hydro should maintain the 10-year service life assumption for its planned demand management programs.

2. The service life assumption for Ontario Hydro's proposed demand management programs should be established by the Demand Management Service Life Review Committee.

The impact of these recommendations is to increase the 1993 revenue requirement by $6 million.

X. PROPOSED RATES

Ontario Hydro offers a demand discount service to industrial customers. The M.E.A. opposes Ontario Hydro's proposal to increase the discount at a time when the risk of interruption is declining. The M.E.A. supports Ontario Hydro's proposal for conducting an experiment with real-time pricing. The M.E.A. believes the expected system benefits of this rate form must be carefully assessed.

RECOMMENDATIONS:

10.1 Discount Demand Service

1. For 1993, the demand discount for interruptible customers should not exceed the 1992 value calculated at 90 per cent of avoided cost.

The impact of this recommendation does not affect the revenue requirement but would lead to a shift in rates between the customer classes resulting in a $1-million decrease in municipal utility costs and a corresponding increase in direct customer costs.

10.2 Real-Time Pricing Experiment

1. Ontario Hydro should be encouraged to conduct the RTP experiment and focus on the question of whether resulting load shifting is sufficiently reliable to provide system benefits.

XI. EXECUTIVE COMPENSATION

This year's review of senior executive compensation indicates that Ontario Hydro's senior executives receive compensation in line with, or below, market. Furthermore, the evidence indicates that compensation practices at other institutions have a significantly larger performance-based component.

RECOMMENDATIONS:

11.1 Executive Compensation — Levels and Practices

1. Performance pay should comprise a much larger portion of remuneration at all levels at Ontario Hydro, including at the senior executive level.

XII. POLICY

Since 1988, Ontario Hydro rate increases have in part been attributed to Darlington. Analysis indicates that the rate increases to date should have been sufficient to bring Darlington into service in its entirety, yet only a small portion of Darlington has actually been brought into service. Revenues collected from ratepayers to bring Darlington into the rate base have, in fact, been applied to fund substantial increases in other costs.

Ontario Hydro must also be encouraged to abandon its tendency to defer costs through the improper application of accounting policies.

RECOMMENDATIONS:

12.1 Darlington and Past Rate Increases

1. In the presentation of future rate increases, Ontario Hydro should not attribute any portion of such increases to the bringing into service of Darlington.

2. Ontario Hydro should find such cost savings as are necessary to offset any future rate increases associated with bringing Darlington into service.

3. The Government of Ontario should initiate a review of Section 37 of the Ontario Energy Board Act and the process of public review of Ontario Hydro.

12.2 Capitalizing of Expenses and Other Decisions Related to Expense Recognition

1. Ontario Hydro should abandon all accounting practices and policies which permit cost deferrals in consideration of rate impacts.

XIII. RECOMMENDED ADJUSTMENTS TO HYDRO'S RATE PROPOSAL

RECOMMENDATION:

13.1 M.E.A. Recommended Rate Increase

1. Ontario Hydro should increase its all-customer average rates by 7.6 per cent for 1993.

TABLE 13.1.1

Summary of Revenue Impacts for 1993
Relative to Ontario Hydro's Original Submission

	Impact on Revenue Requirement Increase/Decrease ($M)		
	Hydro[1] Update	M.E.A.	M.E.A. Reference Section
Economics and Load Forecast			
Economic Update	25	(2)	2.1
Primary Sales	56	(7)	2.2
Fuel and Fuel-Related			
Darlington Delay		(176)	3.2
Energy production plan changes	(11)	(11)	–
Energy Management Reductions		(25)	3.3
OM&A			
OM&A Cuts	(5)	(115)	6.1
Depreciation			
Radioactive waste disposal	(14)		7.1
Net Income and Accounting			
DSM Accounting Policy		6	9.2
Increase net income to meet EDR		254	9.3
Other			
Other	(2)	(2)	–
TOTAL[2]	49	(79)	

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[1] Ex. 1.1.4, June 30, 1992.

[2] May not add due to rounding.

TABLE 13.1.2

Summary of Recommendation

	Hydro Proposal[3]	Hydro Update[4]	Hydro Update meeting SDR[5]	M.E.A. Recommendation[6]
Rate Increase	8.6%	9.2%	12.2%	7.6%
Net Income	318	318	572	572
SDR	572	572	572	572
Contribution to Reserve	(254)	(254)	0	0
Interest Coverage Ratio	1.08	1.08	1.15	1.15

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[3] Main Submission, pp. 63, 83.

[4] Update calculated based on Ex. 1.1.4, June 30, 1992 and assuming Ontario Hydro achieves the level of net income proposed in the Main Submission. See also Ex. 9.3.11.

[5] Update calculated based on Ex. 1.1.4, June 30, 1992 and assuming Ontario Hydro sets net income at a level sufficient to meet SDR.

[6] Table 13.1.1 indicates a decrease in revenue requirement of $79 million after providing an additional $254 million net income to meet SDR.

EXECUTIVE SUMMARY OF CEG

The Coalition of Environmental Groups for a Sustainable Energy Future (the CEG) is an umbrella organization comprised of:

> Friends of the Earth, Greenpeace Canada, Nuclear Awareness Project, Bruce Peninsula Environmental Group, Bruce Nuclear Awareness, Darlington Alert, Durham Nuclear Awareness, Millbrook-Cavan Environmental Watch, Ottawa Nuclear Awareness

The CEG is active in several energy/environment hearings and initiatives including this Board's integrated resource planning in the natural gas distribution sector and in the hearing before the Environmental Assessment Board concerning Ontario Hydro's Demand/Supply Plans.

II. ECONOMICS AND LOAD FORECASTING

The evidence highlighted the particular challenge which the current recession poses for forecasts of the Ontario economy's performance and Ontario Hydro's electrical load.

The CEG notes that last year when the Ontario economy was also experiencing the effects of the current recession, OH predicted an economic growth of -1.5% for 1991. The actual growth rate was -3.3%. At the same time last year, the Ontario Treasurer's estimate of 1991 GDP growth was -3.6%, an underestimate of approximately .3%, but 1.4% closer to actual performance than OH's estimate.

The Ontario Treasurer is forecasting a growth rate of 1.4% for 1992, while OH forecasts 2.5% for 1992 (recently revised downward from 3%). Past prediction accuracy in the current recession suggests that the Board should seriously consider the effect on OH's revenue requirement of adopting the Ontario Treasurer's forecast of 1992 Ontario GDP growth rate as a lower base upon which to add 1993 growth rate projections.

III. ENERGY MANAGEMENT

The CEG's primary concern is to encourage effective and efficient energy conservation investment. Utility Demand Side Management (DSM), which aims at ensuring that such investment takes place, offers significant environmental benefits to the people of Ontario, and important planning and economic benefits, via reduced electricity bills, to Ontario Hydro ratepayers. These benefits are significant in the current context of Ontario Hydro's "surplus" generating capacity when Ontario is facing difficult economic circumstances.

In view of these benefits, the CEG commends Ontario Hydro's current policy commitment which assigns top priority to (DSM). The CEG strongly supports the overall thrust of Ontario Hydro's efforts in DSM and its dedication of significant resources to the task of bringing on increasing increments of DSM resources to meet Ontario's energy services needs.

The CEG's concern is not with Ontario Hydro's commitment to DSM, but with aspects of the manner in which Ontario Hydro is currently carrying it out. The recommendations which are presented in this section are intended to assist Ontario Hydro in avoiding waste, in securing appropriate resource commitment and accounting procedures within the DSM program area, and in ensuring that Ontario Hydro documents its DSM programs with the information that the Board and the interested public need to provide proper scrutiny of Ontario Hydro's efforts. The numbering of these recommendations corresponds to their order of appearance in the CEG's main submission.

A primary concern of the CEG is to avoid waste. In particular, CEG is of the view that attention should be directed to three kinds of waste: the waste associated with failing to capture lost opportunity resources and economically and environmentally beneficial discretionary resources and the waste associated with program inefficiencies.

Lost Opportunity Resources

Ontario Hydro's programs should ensure that lost opportunity resources are not wasted. These are the energy conservation opportunities that present themselves when decisions are made to purchase and construct buildings and energy using equipment. Due to a variety of market barriers, energy inefficient decisions are frequently made in the residential, commercial and industrial sectors across Ontario. The environmental, planning and economic benefits embodied in these energy efficiency resources are lost, usually forever, because of the economic unattractiveness of subsequently reversing these decisions.

RECOMMENDATION 3.1:

Ontario Hydro should give first priority to capturing lost opportunities. Both Ontario Hydro budget allocation and Ontario Hydro program design should reflect the strategic centrality of the lost

opportunity resource. In defining lost opportunities, and in assessing measure value more generally, Ontario Hydro should strive to internalize the environmental benefits of measures by monetizing the environmental externalities of competing supply.

Hydro's current program offerings which target lost opportunities exhibit two weaknesses. First, the programs do not incorporate the full range of lost opportunity resources. For example, electrical efficiency in new gas-heated homes are not currently covered. Moreover, Ontario Hydro is not geared up to capture the significant lost opportunity resources available through fuel switching; with the passage of Bill 118, these resources are squarely within Ontario Hydro's mandate.

RECOMMENDATION 3.7:

Ontario Hydro should place top priority on eliminating gaps in its program offerings which intend to target lost opportunities.

RECOMMENDATION 3.9:

Ontario Hydro should immediately adopt the policy commitment of encouraging fuel switching. This policy should recognize the special environmental benefits associated with renewable energy sources such as wood and solar power, and should advocate the use of incentives where appropriate. In keeping with this policy Ontario Hydro should immediately implement programs to encourage fuel switching, with the highest priority given to the many lost opportunity resources involved.

Secondly, the incentive structure of these programs is often inappropriately designed. For example, incentives in many of these programs are improperly capped at 50% of measure cost.

RECOMMENDATION 3.8:

The CEG recommends that Ontario Hydro abandon its current policy of capping incentives at 50% of measure cost. Incentive levels should be primarily driven by considerations of implementation effectiveness, bounded by the limits set by Ontario Hydro avoided costs (incorporating the monetized environmental externalities as recommended in 3.1).

Discretionary Resources

Ontario Hydro programs should avoid the waste that comes from the failure to capture environmentally appropriate and economically efficient discretionary DSM resources. Discretionary resources are those which are not irretrievably lost unless captured in the short term (eg. switching space or water heating from electricity to solar, wood or natural gas). In capturing the portion of these resources which are environmentally and economically attractive, Ontario Hydro programs should avoid creating lost opportunities. Lost opportunities can be created by the failure to provide deep and comprehensive program treatments.

A number of Ontario Hydro programs currently encourage the creation of lost opportunities through "cream skimming". Cream skimming is the practice of encouraging the implementation of measures which stops short of implementing the full range of those measures which are economically efficient during a program visit. The practice thereby creates "economic orphans" of measures which make economic sense if implemented at the same time as the other measures are adopted but which are not economically attractive if the costs of a return visit must be incurred. This is particularly true of the Home Power Savers Project.

RECOMMENDATION 3.2:

Ontario Hydro should target discretionary DSM resources which are economically efficient, given Ontario Hydro's current generating costs and capability, and given the long run economic impact of missing out on implementing these resources. In pursuing these discretionary resources, Ontario Hydro should not implement programs which create lost opportunities. Ontario Hydro programs should target discretionary customer segments with the view to fully implementing all economically efficient DSM opportunities. Ontario Hydro should stress comprehensiveness and depth of measure implementation, rather than breadth and coverage of program offerings.

RECOMMENDATION 3.10:

Ontario Hydro should review its program delivery design mechanisms and its program incentive structures with the view to eliminating the creation of lost opportunities through cream skimming. In particular Ontario Hydro should emphasize depth rather than breadth in those programs which target measure implementation and should suspend the implementation of the Home Power Savers Project pending a thorough review of its objectives, the measure menu it proposes to install, and its incentive structure.

Program Efficiencies

Ontario Hydro should avoid waste by ensuring that its programs achieve their objectives effectively and efficiently. Some Ontario Hydro programs display direct evidence of being unproductive, and comparison with other utilities who aggressively pursue DSM suggests that Ontario Hydro is not getting enough measure implementation with its current OM&A spending in the DSM area.

RECOMMENDATION 3.3:

Ontario Hydro DSM programs and practices which are ineffective or inefficient should be eliminated. Ontario Hydro should direct its attention to its current levels of non-measure cost expenditure with a view to improving the ratio of demand reduction to total dollar outlay.

RECOMMENDATION 3.11:

Ontario Hydro should closely scrutinize its outlays on DSM OM&A in light of apparent unproductive program expenditures and in view of DSM expenditure patterns displayed by other utilities. Ontario Hydro should identify areas where these expenditures can be reallocated to increase the quantity of electrical conservation delivered per dollar of DSM program outlay.

Budget Allocation to DSM Programs

During the hearings before the Board, the CEG heard no convincing argument that Ontario Hydro's current resource commitment to DSM is too high. It is the CEG's view that Ontario Hydro's DSM resource commitment should be better allocated, not reduced. Indeed, the CEG is persuaded that the benefits from DSM are such that if any change is made to the DSM budget for the 1993, it should be to increase, not decrease, the amount devoted to that program area.

RECOMMENDATION 3.4:

DSM resources should be reallocated within the DSM effort according to the principles set out in recommendations 3.1, 3.2 and 3.3. DSM program expenditures by Ontario Hydro should not be reduced. The benefits from DSM are such that if any change is made to the DSM budget for the 1993 rate year, it should be to increase, not decrease, the amount allocated to the DSM program area.

DSM Accounting Practices

Ontario Hydro's 1993 rate submission proposes to spend approximately $350 million on DSM. Of this about $115 million will be expensed through OM&A.

Utility-owned supply side options entail a continuing operating, maintenance and administration component on the part of the utility once the capital infrastructure is put in place. Accordingly, significant OM&A expenditures form a natural part of utility-owned supply side options. This is not the case for DSM alternatives. Typically, utility involvement ends once the measure is installed; there is no continuing commitment to operate, maintain or administer existing measures. Thus, in the absence of evidence to the contrary all DSM should be capitalized. Capitalization should be the accounting presumption for DSM measures.

RECOMMENDATION 3.8:

Ontario Hydro should adopt an accounting treatment for DSM measures which fairly reflects the nature of the DSM resource. DSM measures yield benefits over time and require virtually no operating or maintenance expenditures on the part of the utility. Accordingly, Ontario Hydro accounting practice should presume DSM cost capitalization. This reduces the 1993 revenue requirement by $100 million and decreases the rate increase requirement by approximately 1%.

DSM Project Documentation

Ontario Hydro produced a large volume of material before the Board and the intervenors on its DSM programs. This material provided useful information to the Board, the CEG and its consultants, and to the other intervenors.

Nonetheless numerous problems remain with the way in which Ontario Hydro documents its DSM programs and reports program-related expenditures. These problems make informed and efficient review of Ontario Hydro's DSM activities exceedingly difficult. They limit independent review, and add time and cost to the review of Hydro's plans by the Board and the interested public.

RECOMMENDATION 3.12:

Hydro should correct the numerous problems and inconsistencies in the documentation supporting its demand management program plans. In particular:

- **Hydro should report energy and demand savings in a form that can be compared directly with its load forecast. The load forecast should be disaggregated by customer sector. Peak demand savings should be expressed on the same terms as the forecast (e.g., 16-hour seasonally-adjusted peak). The method for accounting for avoided line losses should be made explicit.**

- **Hydro should state the energy and peak demand savings directly attributable to each program and directly comparable with Hydro's load forecast. Free-rider savings should be identified and netted out for each program and for each sector's DSM savings.**

- **Hydro's program expenditures should be supported by detailed program descriptions and supporting technical documentation.**

DSM Conclusion

Ontario Hydro states that "Demand management remains the top priority for meeting Ontario's future electricity needs." (Exh 3.1.0 p. 19). In his appearance before the Board, the Chairman of Ontario Hydro, Mr. Mark Eliesen affirmed this commitment. DSM "is the way to go for the future" he said (V. 20, p. 4274).

The CEG agrees with Ontario Hydro's stated commitment. DSM should be Ontario Hydro's top priority. The CEG agrees with Mr. Eliesen; DSM is the way to go for the future. Ontario Hydro's DSM activities in the 1993 rate year must be consistent with this commitment.

In response to Hydro's proposed 8.6% increase some intervenors advocated a lower rate increase, based in part on decreased revenue requirements associated with a smaller DSM commitment.

The CEG is diametrically opposed to this suggestion. We submit that it is essential that Ontario Hydro not be lured into a lessening of its DSM commitment by a perceived need to mitigate short term rate increases. Ontario Hydro has only recently committed itself to placing top priority on developing the DSM resource. To dismantle what has been newly commenced in the name of short sighted economy is to deny the rate payers of Ontario the large environmental and economic benefits which a commitment to DSM will yield and to repeat the mistake made so frequently in the past. The sacrifice of long term responsibility and prudence on the altar of short term expediency has been a path well trodden in Ontario and throughout the industrialized world. Ontario Hydro must reject this route. It must maintain its present momentum. Ontario Hydro must stay the course, improve its DSM effectiveness and deepen its commitment to DSM.

IV. NON UTILITY GENERATION (NUGS)

Ontario Hydro has implemented a number of changes to its NUG program following the DSP revision. These changes included the placing of a moratorium on 13 NUG projects under negotiation and cancelled consideration of 40 proposals for NUG projects which had been submitted to Ontario Hydro. The witnesses asserted that Ontario Hydro continues to accept projects less than 5 MW so long as they are based on renewable resources or utilize high efficiency conversion technology. All other NUG projects will not be considered unless they fall into the category of "special" projects.

The CEG notes that these changes have a number of potential negative effects. The cutoff of 5 MW can create lost opportunity resources by encouraging the under-sizing of projects (potentially creating an economic "orphan" of the megawatts which would be economically attractive in the absence of the 5 MW limit). Moreover, many of the environmental, system planning and economic considerations discussed in connection with DSM resources also apply to NUGs, especially NUGs based on renewable energy. It can make good economic and environmental sense to continue to bring NUGs onto the system, even in a period of capacity surplus given Hydro's reliance upon coal and nuclear power as its marginal resource.

Accordingly, Ontario Hydro should be guided by the environmental and economic values offered by NUGs in comparison to its existing and projected generating alternatives. Ontario Hydro should not preclude capturing available environmental and economic benefits by placing artificial limits on its utilization of NUG resources.

RECOMMENDATION 4.1:

Ontario Hydro should reverse its existing policy of placing arbitrary limits on its utilization of the NUG resource. Ontario Hydro should continue to access those NUG resources which offer environmental and economic benefits to the system. In its assessment of specific NUG resources Ontario Hydro should consider the contribution of NUGs to system flexibility and should consider system avoided costs, including therein the full monetization of environmental externalities.

V. FUEL AND FUEL RELATED

Hydro acknowledges that there is some possibility of Darlington in-service being delayed due to the fuel bundle bearing wear problem, which remains unresolved. As the Board is aware, a delay in Darlington in-service dates would increase rates in the long run, though it would improve the net income situation in 1993.

While the Coalition believes there to be a high probability of Darlington being delayed, we do not suggest that the possibility should be assumed in setting 1993 rates. As noted in our discussion of Depreciation and of Net Income, Hydro has exhibited a propensity for pushing costs off onto future customers. We do not wish to encourage this pattern.

VI. OM&A

Payments to the Canadian Nuclear Association

The CEG was pleased to learn of Ontario Hydro's decision to withdraw from the CNA and its $85,000 per annum support for membership fees and the CNA's "education" campaign.

The move is long overdue. Hydro has no business supporting industry propaganda production. Accordingly, we submit that Ontario Hydro should also cease distribution of CNA materials at its public information centres and Ontario Hydro's secondment of employees to the CNA should be terminated.

Hydro Chairman, Marc Eliesen, referred to the continued involvement of Ontario Hydro with the Canadian Nuclear Society (the nuclear professionals group). The OEB should be aware that the CNS shares offices with the CNA, and plays an advocacy role in favour of nuclear technology not dissimilar to the CNA (though not nearly so well funded). In keeping with its new policy, Ontario Hydro should not provide any support to this organization. Nor should Hydro cover membership fees of Hydro employees.

RECOMMENDATION 6.1:

The secondment of Ontario Hydro employees to the CNA should be terminated, CNA material should not be distributed and support for CNS should cease in accord with Ontario Hydro's decision to withdraw from advocacy groups such as the CNA.

Executive Compensation

The CEG submits that the evidence offered by Ontario Hydro in defense of its executive salary levels is inadequate in that it fails to consider the value of job security enjoyed by Ontario Hydro employees. This enhanced security is evidenced by their long tenure and Hydro's long-standing corporate policies favouring redeployment within the corporation when particular roles are eliminated.

RECOMMENDATION 6.2:

The CEG suggests that any further analysis of compensation should include consideration of non-monetary factors including de facto job security.

VII. DEPRECIATION

In its H.R.20 Report the OEB noted a propensity for Hydro to put off costs onto future subscribers. As set out below, this pattern continues.

DRC Recommendations — Heavy Water Service Life

The Reports of the Depreciation Review Committee propose that the current service life of heavy water (based on an assumed useful life until 2040) be adjusted to reflect the service lives of the nuclear generating facilities now existing and no assumption in favour of further future nuclear facilities be employed. The effect for 1993 would be to raise the revenue requirement by $33 million.

The senior executive chose to defer making a decision on the DRC reports pending the report of the Environmental Assessment Board on Hydro's Demand Supply Plan.

The matter was discussed with Mr. Eliesen who acknowledged that no approval for nuclear (or major fossil supply) is being sought from the EAB. He also agreed that the very reason Hydro is not asking for approval is because Hydro does not want to commit to a choice at this time. It was subsequently put to Mr. Eliesen that even if an EAB decision is forthcoming in 1994, Hydro would not make a decision for some years after that. Mr. Eliesen agreed with that proposition.

The CEG is concerned that Ontario Hydro will not be in a significantly better position to judge the likelihood of future additional nuclear plants upon receipt of the EAB report since Ontario Hydro is not asking the EAB to approve such plant. Even if Hydro does increase its confidence in the likelihood of any particular course of action, no actual decision will be made until the turn of the century.

Given the uncertainty in Hydro's long-term plans, given no current plan to build nuclear and no decision imminent, and given the virtue of conservatism in accounting treatment, we see no justification for delaying the implementation of the DRC recommendations.

RECOMMENDATION 7.1:

The CEG recommends that the Depreciation Review Committee Recommendations be implemented for 1993. The combined effect of the DRC recommendations is an added 21 million to the 1993 revenue requirement.

BHWP-B Service Life

The DRC additional recommendations suggest shortening the service life of Bruce heavy water plant B to 1998 from its current 2001. Action on the recommendation has been deferred pending the EAB decision; yet it is apparent that there would be no need for a longer life even if future nuclear plants were envisioned. Heavy water will be available from the retirement of Pickering A in the 2009 timeframe envisioned as the earliest date for new major supply. With that assumption, the evidence indicates that a sufficient store of heavy water will be on hand by 1996 including an amount for "insurance" purposes beyond the 300 Mg emergency reserve.

Accordingly, we can see no justification for deferring implementation of a shorter service life. Further, we suggest that the evidence is consistent with a 1996 end of service life, rather than the 1998 the DRC suggests.

RECOMMENDATION 7.2:

Service lives of heavy water facilities should be shortened to end in 1996, consistent with forecast production needs. The impact on the 1993 revenue requirement is estimated at $4.6 million.

Decommissioning of Heavy Water Production Facilities

As discussed above with respect to facility service life, there appears to be every likelihood that the facilities will not be needed beyond 1996. Accordingly we submit that decommissioning provisions should be accelerated to conform with that schedule.

RECOMMENDATION 7.3:

Decommissioning provisions for 1993 be raised by a further $2.3 million to conform to an out-of-service expectation of 1994.

Decommissioning of Heavy Water

Hydro makes no provision for the costs of decommissioning heavy water plants. The heavy water becomes radioactive and even after tritium removal requires special storage or disposal. Despite the special problem presented by radioactive wastes Hydro makes no provision on the assumption that the costs will be "relatively small". We believe such optimism both unwarranted and unfair to future subscribers.

RECOMMENDATION 7.4:

Hydro should make provision for the decommissioning and disposal of radioactive heavy water following a detailed cost study.

Intermediate Level Nuclear Waste Disposal

In 1991 Hydro estimated the disposal cost of low and intermediate level nuclear wastes as $211 million. The provision for 1993 is suggested to be $14m but this has been deferred. The stated reason for deferral is uncertainty about the disposal plan. The contrast to Hydro's willingness to charge provisions for high level waste is apparent.

Clearly some significant expense will be faced in regard to low and intermediate level radioactive wastes. Provisions based on the best available estimate should be made with revisions as needed later.

RECOMMENDATION 7.5:

A $14 million provision for disposal of low and intermediate radioactive waste be made in 1993.

Bruce A Refurbishment

The net present value (ie. the avoidable cost) of refurbishing and running Bruce "A" according to Ontario Hydro comes to 2.3 to 2.7 billion dollars (depending upon what is ultimately needed to repair the steam generators). In 1992 and 1993 Hydro's capital budgets for Bruce "A" rehabilitation are $64 million and $98 million.

Even if the EAB in the course of the current D/SP hearings were to examine the matter in detail, it will not issue a decision in time to avoid the significant expenditures budgeted for 1992, 1993 or for 1994 when the bulk of the work is expected.

There is a gap in the public review of major Hydro decisions — a gap between the work of this Board and the work of the EAB — and the Bruce "A" refurbishment falls into that gap.

Hydro has not offered to this Board sufficient information for an adequate review of the decision. When Mr. Eliesen was asked about the merit of an early consideration by this Board of the advisability of the Bruce "A" refurbishment, he responded that there was no more need for review than for other capital expenditures.

The logic of Mr. Eliesen's response evades us. Certainly inadequate review of other aspects of Hydro's operations cannot be a compelling argument for avoiding review of this decision. And certainly a multi-billion dollar commitment to refurbishing Bruce "A" is a major step that is not a mere routine maintenance decision.

There are alternatives. In particular, the evidence before this Board indicates that Demand Management and NUG are viable and cost-effective alternatives.

Hydro is intending to achieve penetration rates for cost-effective DM of only 31% yet its Espanola experiment shows that 80% is attainable. Thus there are certainly significant additional demand management opportunities available at a cost competitive with Hydro's assumptions for Bruce "A".

The availability of NUG at attractive prices is also a matter of record. Thus we have a plan to commit a significant sum in a field where there are known alternatives. Surely a review of the alternatives is warranted. And surely $2.7 billion warrants that review being both thorough and public.

RECOMMENDATION 7.6:

The CEG recommends that this Board should remain seized of the Bruce "A" refurbishment question and should undertake a detailed review in the fall of 1992. In the alternative the Board should recommend to the Minister that a separate reference concerning the matter would be appropriate.

In either case, in the interim, all work on retubing, including advanced engineering, issuing of contracts and planning should be suspended.

IX. ACCOUNTING POLICY AND NET INCOME

PART 1 — ACCOUNTING POLICY

Setoffs to Interest on Negative Pickering Payback

In past years this Board has received updates on the Pickering Payback agreement between Ontario Hydro and the government of Ontario and AECL. Following the pressure tube outages at Pickering 1 and 2 in the 1980's the question of whether the payback could be negative was resolved in Hydro's favour but AECL insisted that negative payback would not be payable forthwith; rather it would be set off against future positive payback. Hydro has projected the positive payback that might flow assuming good performance for the balance of Pickering's life and has found that the sum of the outstanding negative balance owing from AECL and the government plus the interest accruing upon that balance will exceed the projection of positive payback. Hydro indicates that the interest portion will be charged to customers.

Over the period from 1993 until 2003 the interest is expected to total $683 million. Hydro indicated that AECL and the government of Ontario will be presented with this bill but are not expected to honour it, hence the provision which causes this cost to be charged to Hydro's customers on an ongoing basis.

It would appear that the contract allows these amounts to be charged to AECL and Ontario but does not create a mechanism for collection. Since Ontario Hydro has routine dealings with AECL and the province, it may be possible for Ontario Hydro to set off amounts owing to AECL and the province under other agreements against this interest charge. The province may forbid such charges and AECL can be expected to balk. Nevertheless, if the alternative for AECL is to give up the 80 or $100 million of annual Ontario Hydro funded work it may well learn to live with a $26 million annual set off.

RECOMMENDATION 9.1:

Ontario Hydro should consider recovery of the $53 million annual interest cost of negative payback balances by way of set off against other amounts owing to AECL and the province.

Delayed Amortization of Rio Losses

In its H.R. 20 Report the Board recommended that Hydro begin to amortize and charge into rates the losses associated with the Rio Algom uranium contracts. Hydro agrees with amortization but has chosen to defer the commencement of amortization for two years to minimize rate impacts.

The amortization matches the costs to the customers for whom the contract risk was originally taken and the cancellation pursued. The deferral has no such justification. It defeats this matching. This is a clear example of accounting policy yielding to rate concerns. The CEG is concerned that such practices hide the true financial situation of Ontario Hydro and thus encourage unduly low net income. We suggest that costs should be set according to the dictates of accounting practise and any unacceptable rate impacts should be dealt with explicitly in the context of a net income discussion.

The annual impact on the revenue requirement of the Rio loss amortization is of the order of $47 million.

RECOMMENDATION 9.1:

Ontario Hydro should commence amortization charges for the Rio losses in 1993 rates in the amount of $47 million.

Heavy Water Accounting

The CEG supports the general direction of the proposed change which will better match costs and intended benefits.

The CEG notes that this change is premised upon the reduced likelihood of future nuclear expansion as evidenced in the D/SP Update plan. The willingness of Ontario Hydro to rely upon this factor here but not for service life assumptions is seemingly inconsistent (see the previous section on Depreciation).

PART II — NET INCOME

Setting the appropriate level in recessionary times

The CEG is not insensitive to the position that achieving targeted net income should yield to some degree in difficult economic circumstances. However, we suggest that the appropriate minimum in such times is that required to meet the statutory requirement for debt retirement (SDR) in order to avoid a planned withdrawal from the Reserve for Stabilization of Rates and Contingencies (RSRC). This would require a net income of $572 million — a further $325 million in net income compared to Hydro's proposal.

There are significant risks to net income in 1993 including the possibility of a negative outcome in the Denison litigation, or the payment of up to $300 million in penalties under the Manitoba contract.

In addition, there are no doubt unforeseen or underestimated risks, be they in the costs of Hydro's operations, the performance of its plant or the economy as a whole. One example is the possibility that the

Pickering seal problem necessitates a shutdown of all 8 units. It is precisely to deal with such uncertainties that the corporation is empowered by statute to build up a reserve fund.

The OEB in its H.R.20 Report noted:

> 9.1.34 The Board is most concerned with Hydro's intentions to repeatedly draw down the RSRC rather than increasing its rates sufficiently to cover the current costs of operation, since in the Board's opinion the main purpose of the RSRC is to provide for unforeseen events.

The risks to net income include many such as load level that vary in proportion to the revenue requirement but Ontario Hydro's reserve fund has not kept pace with its revenue requirement. The 1983 and 1993 RSRC levels are roughly the same yet the assets of the utility have doubled and the revenue requirement increased dramatically.

Thus Hydro's intention of dipping into the fund yet again must be viewed against a background of an ever declining fund in comparison to the risks faced.

In addition, we are concerned that Hydro's net income levels tell just part of the story of rate increase deferral. Hydro has exhibited a consistent pattern of deferring costs using rate rulings and by deferring accounting policy and service life changes. In essence, the revenue requirement has already been reduced by efforts to smooth rates prior to the net income question. An example is the amortization of Rio losses.

Accordingly, the CEG submits that setting net income at the SDR level involves a significant reduction of net income from levels that could be justified and already contains significant reductions due to earlier rate smoothing efforts. To consider reductions below the SDR which would involve the further erosion of the RSRC seems unwarranted given the burden already thrust upon future subscribers by Hydro's cost deferral policies.

RECOMMENDATION 9.2:

Ontario Hydro's net income for 1993 should be set at $572 million to avoid further reductions to the RSRC.

The Relationship between Demand Management and Net Income

The CEG is quite concerned with the suggestion from Board Staff that delaying DSM programs is a potential means to lower rates or improve net income in 1993.

As we discuss under Energy Management, cutting DSM budgets would be short-sighted in the extreme. Mr. Eliesen agrees that DSM is of vital long-term significance and cannot be turned off and on:

> I keep emphasizing, and I would insist again, the demand management is not a fad. It is not something that can be turned on or turned off. That we have to establish a viable base for future expansions to take place, and in my judgment it applies not only to Ontario Hydro, but most utilities in North America, and I see that trend taking place with other utilities as well. (V. 20, p. 4462)

As discussed in our argument on Energy Management there is a relatively small portion of the DSM budget that is both a current expense and is actually avoidable for 1993. To noticeably reduce the rate increase (by 1/4 to 1/2 a percentage point) would require devastating cuts to the DSM budget. Given the importance of the budget to Hydro's long-term strategy and to the economic and environmental interests of Ontarians such cuts should be ruled out.

Proposed Rates

AMPCO has argued before the Board and in the press that its members should be shielded from any rate increase. One AMPCO witness was willing to accept the obvious implication of such a suggestion, that residential and commercial customers should subsidize the large industrials.

Apart from the clear inequity of the proposal, the Board should recall the fact that it was AMPCO who repeatedly championed the construction and completion of Darlington, and it is Darlington that is responsible for 6.4% points of the 8.6% rate increase Hydro requests. Further, it was AMPCO who consistently argued to this Board that rates be held down in the 1980's and thus supported Hydro's practice of pushing off costs to today's customers.

AMPCO is the author of its own misfortune. If anything, it is AMPCO's rates that should be increased to shield others from the impacts of Darlington and the rate increases precipitated by Hydro's past record of fly now pay later accounting.

SUMMARY OF RECOMMENDATIONS AND ESTIMATION OF RATE IMPACT

Recommendations

RECOMMENDATION 3.1:

Ontario Hydro should give first priority to capturing lost opportunities. Both Ontario Hydro budget allocation and Ontario Hydro program design should reflect the strategic centrality of the lost

opportunity resource. In defining lost opportunities, and in assessing measure value more generally, Ontario Hydro should strive to internalize the environmental benefits of measures by monetizing the environmental externalities of competing supply.

RECOMMENDATION 3.2:

Ontario Hydro should target discretionary DSM resources which are economically efficient, given Ontario Hydro's current generating costs and capability and, given the long run economic impact of missing out on implementing these resources. In pursuing these discretionary resources, Ontario Hydro should not implement programs which create lost opportunities. Ontario Hydro programs should target discretionary customer segments with the view to fully implementing all economically efficient DSM opportunities. Ontario Hydro should stress comprehensiveness and depth of measure implementation, rather than breadth and coverage of program offerings.

RECOMMENDATION 3.3:

Ontario Hydro DSM programs and practices which are ineffective or inefficient should be eliminated. Ontario Hydro should direct its attention to its current levels of non-measure cost expenditure with a view to improving the ratio of demand reduction to total dollar outlay.

RECOMMENDATION 3.4:

DSM resources should be reallocated within the DSM effort according to the principles set out in recommendations 3.1, 3.2 and 3.3. DSM program expenditures by Ontario Hydro should not be reduced. The benefits from DSM are such that if any change is made to the DSM budget for the 1993 rate year, it should be to increase, not decrease, the amount allocated to the DSM program area.

RECOMMENDATION 3.5:

Ontario Hydro should adopt an accounting treatment for DSM measures which fairly reflects the nature of the DSM resource. DSM measures yield benefits over time and require virtually no operating or maintenance expenditures on the part of the utility. Accordingly, Ontario Hydro accounting practice should presume DSM cost capitalization. This reduces the 1993 revenue requirement by $100 million and decreases the rate increase requirement by approximately 1%.

RECOMMENDATION 3.6:

Hydro should correct the problems and inconsistencies in the documentation supporting its demand management program plans. These problems limit independent review, and add time and cost to the review of Hydro's plans by the Board and the interested public.

RECOMMENDATION 3.7:

Ontario Hydro should place top priority on eliminating gaps in its program offerings which intend to target lost opportunities.

RECOMMENDATION 3.8:

The CEG recommends that Ontario Hydro abandon its current policy of capping incentives at 50% of measure cost. Incentive levels should be primarily driven by considerations of implementation effectiveness, bounded by the limits set by Ontario Hydro avoided costs (incorporating the monetized environmental externalities as recommended in 3.1).

RECOMMENDATION 3.9:

Ontario Hydro should immediately adopt the policy commitment of encouraging fuel switching. This policy should recognize the special environmental benefits associated with renewable energy sources such as wood and solar power, and should advocate the use of incentives where appropriate. In keeping with this policy Ontario Hydro should immediately implement programs to encourage fuel switching, with the highest priority given to the many lost opportunity resources involved.

RECOMMENDATION 3.10:

Ontario Hydro should review its program delivery design mechanisms and its program incentive structures with the view to eliminating the creation of lost opportunities through cream skimming. In particular Ontario Hydro should emphasize depth rather than breadth in those programs which target measure implementation and should suspend the implementation of the Home Power Savers Project pending a thorough review of its objectives, the measure menu it proposes to install, and its incentive structure.

RECOMMENDATION 3.11:

Ontario Hydro should closely scrutinize its outlays on DSM OM&A in light of apparent unproductive program expenditures and in view of DSM expenditure patterns displayed by other utilities. Ontario Hydro should identify areas where these expenditures can be reallocated to increase the quantity of electrical conservation delivered per dollar of DSM program outlay.

RECOMMENDATION 3.12:

Hydro should correct the numerous problems and inconsistencies in the documentation supporting its demand management program plans. In particular:

- Hydro should report energy and demand savings in a form that can be compared directly with its load forecast. The load forecast should be disaggregated by customer sector. Peak demand savings should be expressed on the same terms as the forecast (e.g., 16-hour seasonably-adjusted peak). The method for accounting for avoided line losses should be made explicit.

- Hydro should state the energy and peak demand savings directly attributable to each program and directly comparable with Hydro's load forecast. Free-rider savings should be identified and netted out for each program and for each sector's DSM savings.

- Hydro's program expenditures should be supported by detailed program descriptions and supporting technical documentation.

RECOMMENDATION 4.1:

Ontario Hydro should reverse its existing policy of placing arbitrary limits on its utilization of the NUG resource. Ontario Hydro should continue to access those NUG resources which offer environmental and economic benefits to the system. In its assessment of specific NUG resources Ontario Hydro should consider the contribution of NUGs to system flexibility and should consider system avoided costs, including therein the full monetization of environmental externalities.

RECOMMENDATION 6.1:

The secondment of Ontario Hydro employees to the CNA should be terminated, CNA material should not be distributed and support for CNS should cease in accord with Ontario Hydro's decision to withdraw from advocacy groups such as the CNA.

RECOMMENDATION 6.2:

The CEG suggests that any further analysis of compensation should include consideration of non-monetary factors including de facto job security.

RECOMMENDATION 7.1:

The CEG recommends that the Depreciation Review Committee Recommendations be implemented for 1993. The combined effect of the DRC recommendations is an added 21 million to the 1993 revenue requirement.

RECOMMENDATION 7.2:

Service lives of heavy water facilities should be shortened to end in 1996, consistent with forecast production needs. The impact on the 1993 revenue requirement is estimated at $4.6 million.

RECOMMENDATION 7.3:

Decommissioning provisions for 1993 be raised by a further $2.3 million to conform to an out-of-service expectation of 1994.

RECOMMENDATION 7.4:

Hydro should make provision for the decommissioning and disposal of radioactive heavy water following a detailed cost study.

RECOMMENDATION 7.5:

A $14 million provision for disposal of low and intermediate radioactive waste be made in 1993.

RECOMMENDATION 7.6:

The CEG recommends that this Board should remain seized of the Bruce "A" refurbishment question and should undertake a detailed review in the fall of 1992. In the alternative the Board should recommend to the Minister that a separate reference concerning the matter would be appropriate. In either case, in the interim, all work on retubing, including advanced engineering, issuing of contracts and planning should be suspended.

RECOMMENDATION 9.1:

Ontario Hydro should consider recovery of the $53 million annual interest cost of negative payback balances by way of set off against other amounts owing to AECL and the province.

RECOMMENDATION 9.2:

Ontario Hydro should commence amortization charges for the Rio losses in 1993 rates in the amount of $47 million.

RECOMMENDATION 9.3:

Ontario Hydro's net income for 1993 should be set at $572 million to avoid further reductions to the RSRC.

Rate Impact

Net change due to recommendations for which quantification is available -- $298.9 million, corresponding to an increase of 3.6% ($83 m = 1%) above the 8.6% proposed by Ontario Hydro for a total recommended increase of 12.2%.

EXECUTIVE SUMMARY OF IPPSO

I. GENERAL POLICY

Hydro's Approach to the OEB Rate Hearings

We found that the evidence of Ontario Hydro, written and oral, failed to meet the primary test of assistance to the Board. It is submitted that this stems in part from an overly adversarial approach, in which advocacy is the watchword, and in part from the fact that Hydro has too thoroughly internalized the advisory (as opposed to regulatory) role of the Board. To respond to this, the Board should recommend as follows:

> **"1. That the Ontario Hydro Board of Directors issue a directive to all of its personnel involved in the Ontario Energy Board annual rate hearings requiring those personnel to carry out all actions with respect to those hearings, including preparation of evidence, delivery of oral evidence and responses to cross-examination, in accordance with the following principles:**
>
> 1. **The OEB rate hearings are not an adversarial process, and no Hydro written or oral evidence should take an adversarial or advocacy position or in any way deviate from the pursuit of a single goal: maximization of assistance to the Board in its deliberations.**
>
> 2. **In preparing evidence or otherwise dealing with the Ontario Energy Board, Ontario Hydro must treat the Board as if it were making a final, binding and enforceable rate decision.**

Quality of Data Provided to the Board

The ever-shifting data constantly in play in the HR hearings is a source of confusion and waste, and it is unnecessary. We propose that to deal with this the Board issue the following direction to the parties:

> **"2. The Board hereby directs that Ontario Hydro, Board staff, and interested parties establish a joint process, to be implemented no later than September 30, 1992, with the goal of ensuring, by agreement between the parties, with or without dissenters, that commencing with the HR 22 rate hearings the Board, the**

> **applicant, Board staff, and all intervenors, will have access to information that remains consistent throughout the hearing process, such that all changes in information and their impacts will be reflected without delay in the consistent set of data being used by all parties in their involvement in the hearings. The working group established in response to this direction shall report to the Board no later than March 31, 1993 on the results of its determination, so that such results can be included, if the Board deems it appropriate, in the Board's procedural orders for the HR 22 hearing. This directed process shall be considered a continuation of the HR 21 hearing, and as such parties otherwise eligible for intervenor funding will be entitled to request and, in the Board's discretion, receive supplementary funding to participate. Supplementary funding applications in this regard shall be received up to and including August 31, 1992, with the Board intending to make a decision thereon on or before September 15, 1992."**

Rate and Revenue Impacts

It was clear, especially with respect to non-utility generation, that Hydro's calculations of impacts on rates and revenue requirements are of doubtful value, but that proper presentation of that category of information would be of assistance to the Board. We suggest that the Board issue the following direction to Ontario Hydro:

> **"3. The Board directs Ontario Hydro to prepare, and file with its Main Submission for HR 22, a report including the following:**

1. **All material methods, assumptions and parameters by which the current revenue requirement and rate increase impacts are calculated.**

2. **An analysis of alternative methods of reporting revenue requirement and rate increase impacts and the nature of the conclusions that would be appropriately drawn from those alternative methods.**

3. **A recommended method or methods of reporting revenue requirement and rate increase impacts that will most effectively assist the Board in understanding the major influences on revenue requirements and rate impacts."**

Unit Costs vs. Customer Bills

It is central to the value of demand management that, while unit costs of electricity may be and often are increased, the overall costs of energy services will go down. It is only those dollar costs that actually matter to the customers. In this context, the continued emphasis by Ontario Hydro on the percentage increase in unit rates is an anachronism, and unintentionally misleading. For 1993, Ontario Hydro's proposed 8.6% rate increase translates into only a 6.07% increase in residential bills, or about 2.9% in real terms (Appendix A). The Board should direct as follows:

> **"4. That Ontario Hydro establish a methodology to provide to the Board, commencing with the HR 22 hearing, readily understandable information on the proposed increase or decrease in the average costs of the energy services represented by electricity for Hydro's customers, disaggregating that information by customer category and between electricity bills and total customer costs."**

Cost-Cutting Measures

The failure of Ontario Hydro's management to deliver (as opposed to merely trying) on the tough cost-cutting needed today is completely unacceptable. It is unsufficient to tell this Board about programs and attempts. This Board, and the Hydro Board, should see results. To this end, the Board should recommend as follows:

> **"5. That Ontario Hydro should establish more stringent cost-cutting measures in the short term, using a more results-oriented approach, including for example establishing tough and immovable budget limits for the branches. Ontario Hydro is expected to achieve those cost-cutting objectives, and report to this Board in HR 22 on the success of those measures and their implications for the future."**

Budgetting and Rate Setting in Tough Times

The evidence of the applicant has not demonstrated an understanding of a critical management fact in tough times: forecasting, budgetting and managing must be more conservative, and, more importantly, more risk averse when an organization faces serious financial pressures. In this area, the Board should recommend as follows:

> **"6. That, prior to finalizing the 1993 rates, the Board of Directors of Ontario Hydro instruct management to provide to it information on costs, revenues, and other relevant factors using more conservative and risk averse assumptions, and that the Ontario Hydro Board of Directors utilize that more conservative set of information in its rate setting determinations, both for the 1993 year and for any other year in which Hydro is faced with a combination of poor short-term financial performance and uncertain long-term financial recovery."**

II. ECONOMICS AND LOAD FORECASTING

Economic Growth Forecast

In light of the current information available to the Board on economic activity in Ontario in 1992 and 1993, and particularly in light of what is clearly a downward trend in the projections, we propose that the Board make the following recommendation:

> **"7. That Ontario Hydro utilize, in its load forecasting and therefore in its revenue requirement and rate setting, a 2% real GDP growth in 1992 and a 3% real GDP growth in 1993."**

Low Probability, High Impact Events

Hydro's economic forecasters have made a determination that no provision should be made for two very significant potential economic impacts in 1993: constitutional changes, and the proposed North American Free Trade Agreement. While analysis of such impacts is admittedly extremely difficult, what should be clear is that any diligent analysis will be better than none at all. This is especially true when both of these unusual events have the potential to depress the Ontario economy in the short term. This Board is not in a position to reflect this potential in its rate recommendations, but in our submission it should make the following two recommendations to the Ontario Hydro Board of Directors:

> **"8. That the Ontario Hydro Board of Directors require its management to present to the Hydro Board, prior to the Board's determination of 1993 rates, a full analysis of the probabilities and potential impacts of constitutional resolution and the North American Free Trade Agreement on the Ontario economy, Ontario Hydro's load forecast, and Ontario Hydro's net income."**
>
> **"9. That, in establishing 1993 rates, the Ontario Hydro Board of Directors reduce projected revenue by a contingency amount reflecting the uncertainties surrounding resolution of the constitutional debate and the possible introduction of a North American Free Trade Agreement."**

Hydro's Forecasting Models

Hydro continues to have difficulties presenting reliable short-term load forecasts, apparently because of a failure in the last few years to recognize the asymmetry of the uncertainty band. This is an ongoing problem, and to help ameliorate it for the future the Board should direct Ontario Hydro as follows:

> **"10. That Ontario Hydro prepare for filing as part of the Main Submission in HR 22 a full report on the design and track record of its short-term load forecasting models, with specific reference to its methods of calculating the uncertainty band and the success of those methods."**

With respect to 1993 rates, the Board should make the following recommendation:

> **"11. That Ontario Hydro should reduce its basic load forecast by one-half of 1% for 1993 to recognize explicitly the asymmetry of short-term load uncertainty."**

Own-Price Elasticity

Hydro does not include a provision for own-price elasticity in its sensitivity analyses of load. The first year impact, 6%, is itself sufficient to require this, but in addition there is a likelihood that, in tough economic times, the first year elasticity impacts will be higher than the long-term average if rate increases are substantial. The Board needs good information if it is to deal with this impact properly. Therefore, the Board should direct Ontario Hydro as follows:

> "12. That future load forecast sensitivities provided by Ontario Hydro to this Board include, in disaggregated form, all own-price elasticity impacts of the sensitivity otherwise calculated."

III. ENERGY MANAGEMENT

Program Design

Programs like the incandescent lightbulbs promotion ("like a car manufacturer giving away bicycles to motivate people to buy cars") suffer from lack of involvement in program design by the very groups, such as public interest groups, that have the most knowledge and expertise in the area. The Board should recommend as follows:

> **"13. That the development of Hydro's future demand management programs and policies should take place within a framework of a collaborative process between Ontario Hydro and interested public interest groups, and that Ontario Hydro report to this Board in HR 22 on its success in developing and implementing such a collaborative process."**

IV. NON-UTILITY GENERATION

Two Types of NUGs

Despite the obvious nature of the distinction, Ontario Hydro does not appear to understand that there are two different kinds of NUGs (NUGs that are valuable primarily for their short lead times and low cost, such as combined cycle gas plants, and NUGs that, while they usually also deliver some of those benefits, are valuable primarily for their environmental, social, and diversity benefits, such as small hydro and landfill gas). While they have names for the two categories (major supply NUGs and preferred NUGs), they apply the same policies to both. The evidence showed, though, that the same policies are not appropriate for both categories. Therefore, it is submitted that the Board should make the following recommendation:

> **"14. That Ontario Hydro establish separate sets of goals and related policies for flexibility-oriented NUGs and environment-oriented NUGs, and report to the Board at HR 22 on its progress in establishing and implementing those distinct policies."**

Preferred NUGs

The evidence demonstrated that, in a period of surplus, preferred NUGs (unlike major supply NUGs) still have substantial value. That value is not only in the environmental and social benefits, but also in the long-term cost and diversity benefits to the ratepayers. To ensure that those benefits are acquired, focussed procurement in this sector should continue. Hydro's "open door" policy, which they say will last essentially until someone tries to pass through that door, is not an appropriate response. The Board should, it is submitted, recommend as follows:

> **"15. That Ontario Hydro design and implement a formal procurement program for environmentally attractive non-utility generation, with policies that favour NUGs with collateral benefits. The program should include such techniques, including (if appropriate) set-asides, adders, and other such tools, as may be necessary to make such a program effective. Hydro should report on the design and implementation of that program in HR 22, which report should expressly include a comparison of Hydro's plans with other jurisdictions, including at least Britain, Bonneville Power Administration, and California."**

Lost Opportunities

The Board heard evidence that tightening up the NUG rules during a surplus can have the unwelcome effect of causing cogeneration opportunities to be lost permanently or for long periods of time. In addition to the detrimental impact on the utility, this hurts the competitiveness of Ontario businesses and the financial integrity of public sector enterprises such as hospitals and universities. The Board should therefore make the following recommendations:

> **"16. That Ontario Hydro should consider moving responsibility for small load displacement cogeneration from its Non-Utility Generation Division to its Energy Management Branch, including it as one of the load reduction options offered to customers within the energy management sphere."**

> **"17. That Ontario Hydro should investigate, and implement at the earliest possible opportunity, appropriate programs to prevent lost opportunities in cogeneration during the predicted economic recovery."**

Preference Premium

It is clear that Ontario Hydro has not studied the preference premium in sufficient detail to understand the connection between the value delivered by environmentally attractive NUGs and the rates paid by Ontario Hydro to get that power. This work is urgently required. If the 10% is not justified, it should be cancelled. If the 10% is too small relative to the value, Hydro should institute a policy by which they pay for what they get. Therefore, it is proposed that the Board direct Hydro as follows:

> **"18. That Ontario Hydro should prepare, and file with the Board prior to HR 22, a full report on the 10 % preference premium including its initial and continuing justification, its practical implications including rate impacts, and its achievement, if at all, of the goals it is intended to accomplish. The report should include a full comparison to other jurisdictions, and to emerging information on the value of key environmental externalities."**

Rate Impacts of Non-Utility Generation

Hydro currently charges the front-loading component of NUG rates to today's customers, even though the customers that benefit are primarily those in later years. Evidence from Hydro showed that a change in NUG contracts to rectify this anomaly is under consideration. The Board should support such a change by the following recommendation:

> **"19. That Ontario Hydro change its accounting practices and, if necessary, the structure of its non-utility generation contracts, so that the impact of front loading of non-utility generation contracts is borne by the ratepayers that benefit therefrom."**

As noted earlier, the calculations of rate and revenue requirement impacts by Ontario Hydro are of dubious value. A recalculation of the rate impacts of NUGs in 1993 (Appendix B) shows that on Hydro's assumptions there is a very small upward rate impact, and on alternate assumptions there is a very small downward rate impact. In the long term, of course, the rate impact is always downward. It is submitted that the Board should recommend as follows:

> **"20. That Ontario Hydro develop, and initiate for the HR 22 hearings, a new method of reporting the impacts of non-utility generation that more fully describes the upward or downward pressure of NUG procurement on rates."**

Transmission Constraints

Hydro has already experienced problems with getting needed NUGs due to transmission constraints. The value of the three to four year lead time for major supply NUGs is largely illusory if you can't take the power because of the ten year lead time of the transmission required to get the power where it is needed. The Board should, it is submitted, recommend as follows:

> **"21. That Ontario Hydro develop a transmission upgrading plan that will reduce or eliminate any transmission barriers to gaining in the future the full benefit of short lead times from major supply NUGs."**

Alternate Energy Technologies

Where short term cost cutting proceeds from an incorrect premise - that long term RD&D has little value - it is appropriate for the OEB to step in and recommend that Ontario Hydro take a longer view of its short term expenditure patterns, leading us to suggest the following recommendation by this Board:

> **"22. That Ontario Hydro's proposed $8 million investment in alternate energy technologies in 1993 be reinstated and expanded as an investment in the future of electricity generation in Ontario."**

The Non-Utility Generation Division

If this Board recommends and Hydro adopts the proposals set forth herein, the NUG Division will have useful activities to do in 1993. If not, it will be overstaffed and have an excessive budget, since reductions in NUG procurement have removed the bulk of their work. The Board should recommend as follows:

> **"23. That Ontario Hydro review the budget and staffing levels of the NUG Division in the context of its current and recommended policies and programs, with the goal of achieving reductions, or reallocations to new recommended NUG**

> **Division activities, of at least 10 staff and at least $1.5 million in annual OM&A budget."**

IPPSO Membership

Hydro Chairman Marc Eliesen's announcement that Hydro will end its IPPSO membership told only half the story. It did not explain the unique nature of Hydro's membership status, designed specifically to avoid conflict of interest concerns. The Board should recommend as follows:

> **"24. That the Ontario Hydro Board of Directors review the Chairman's decision to cancel the Corporation's complimentary, non-voting Associate membership in the Independent Power Producer's Society of Ontario and determine whether it is in the best interests of the Corporation."**

V. FUEL & FUEL RELATED AND SECONDARY SALES

Fossil Station Operating Policy

It is inexcusable that Ontario Hydro operate its fossil stations to sell electricity to other jurisdictions, ignoring the resulting environmental damage in Ontario. The Board should recommend as follows:

> **"25. That Ontario Hydro should immediately end its policy of running fossil stations right up to the acid gas emissions limit and selling the excess power."**

Environmental Dispatch

The Board heard sufficient introductory evidence on environmental dispatch to be aware that it is a potentially important issue over the next few years, and that Hydro has little knowledge of the area. Before this issue can be reviewed properly, Hydro must upgrade its knowledge base, and in doing so can assist the Board as well. It is submitted that the Board should direct Ontario Hydro as follows:

> **"26. That Ontario Hydro should prepare, and table at HR 22, a full analysis on the policy and practical impacts of shifting from straight economic dispatch to a form of environmental dispatch, including discussion of the methods of environmental dispatch, comparison with other jurisdictions and presentation of implementation options."**

Generation Assumptions

The nature of the evidence to the Board this year left little doubt that Hydro's estimates of in-service dates for Darlington continue to be overly optimistic. This is especially relevant when the rate year is one in which no capacity shortfalls are likely, and therefore the utility has the time to make sure that they have the thing working properly before they bring it into the rate base. Despite the fact that in the past Hydro has not followed the Board's recommendations on this issue, it is submitted that the Board should recommend as follows:

> **"27. That Ontario Hydro adopt the following in-service and return to service dates for the Darlington Units:**
>
> - **Unit 1: May, 1993**
> - **Unit 3: January, 1993**
> - **Unit 4: June, 1993**
> - **Unit 2: August, 1993 (return to service)"**

By the same token, Hydro's continued insistence that "next year" nuclear capability factors will jump higher is still based more on hopes than on any track record. Until Hydro establishes some track record, a more conservative approach is appropriate. We propose that the Board recommend as follows:

> **"28. That Ontario Hydro reduce its estimate of electricity production from in-service nuclear units by 4 TWh. in 1993 to reflect the potential for lower than expected capability factors."**

Secondary Sales

The above recommendations with respect to nuclear, coupled with skepticism about Hydro's continual overestimates of secondary sales, lead us to suggest that the Board recommend:

> **"27. That Ontario Hydro reduce its estimate of secondary sales for 1993 from $120 million to $50 million."**

VI. OM&A AND CAPITAL

Review of Bruce A Expenditures

Evidence from Hydro is that, while it has not finished its analysis, it is confident that the proposed expenditures on Bruce A will produce a net benefit. Evidence from Mr. Marcus showed, particularly against the backdrop of the case study presented by Mr. Kinosian, that there are likely scenarios in which those expenditures are not cost-effective. Although this debate by itself justifies the Board inquiring further into these substantial expenditures, other factors increase the importance of this. Hydro says there is no point at which the question of whether the continued operation of Bruce A benefits the ratepayers is ever actually put to the Hydro Board. Hydro's Chairman gave evidence that, in his view, these significant expenditures are nothing special. And, after Hydro's evidence this Board was left to wonder whether Hydro was saying these expenditures are being reviewed at the EAB, or not.

Underlying this is the Board's responsibility to review all Hydro expenditures with a material impact on rates. Since it is clear that this particular review cannot practically be carried out within the tight June time frame, and since a deferral of this review would make the point moot, it is submitted that the Board should make the following direction:

> **"28. The HR 21 hearing shall continue on October 23, 1992 for a period not exceeding two weeks to consider in detail the cost effectiveness of proposed expenditures on the repair, rehabilitation and retubing of the Bruce A nuclear generating station. The following procedures will apply:**

1. **On or before August 14, 1992, Ontario Hydro shall file with the Board a full and complete cost/benefit analysis with respect to all future expenditures on the Bruce A nuclear generating station, which report shall include full details of raw data, backup assumptions, sensitivity analyses and similar information, combined and disaggregated.**

2. **On or before August 21, 1992, Ontario Hydro shall convene a meeting of interested parties and/or their experts to agree on information to be provided by parties each to the other with respect to the Bruce A nuclear generating station, including the specific content of such information and the form and timing of information exchange. All Ontario Hydro information shall be provided by Ontario Hydro on or before August 28, 1992.**

3. **Parties choosing to participate in the fall hearing on Bruce A may commence issuing interrogatories to Ontario Hydro at any time after the date of this order, but in any event no later than September 8, 1992. Ontario Hydro shall respond to all interrogatories prior to September 16, 1992.**

4. **All evidence of parties other than Ontario Hydro shall be filed on or before September 30, 1992.**

5. **Interrogatories addressed to parties other than Ontario Hydro may be issued at any time after the date of this order, but in any event no later than October 8, 1992. All such parties shall respond to interrogatories on or before October 15, 1992.**

6. **Parties eligible for intervenor funding may apply for supplementary funding with respect to the Bruce A hearing at any time on or before August 28, 1992. It is the Board's intention to hold a hearing with respect to supplementary funding, if required, on September 2, 1992, and to issue its decision with respect to supplementary funding on or before September 10, 1992. Parties for whom these funding dates present a financial difficulty may file their applications earlier and request an earlier hearing date."**

As a result of the above proposal, it is submitted that it would be inappropriate for Ontario Hydro to expend or commit substantial amounts on Bruce A repair, rehabilitation or retubing until this Board has had an opportunity to review and comment on those expenditures. Therefore, it is submitted that the Board should make the following recommendation in its initial report:

> **"29. That, until this Board has had an opportunity to review and comment on the proposed expenditures on the Bruce A nuclear generating station, Ontario Hydro should delay all expenditures with respect to such station that are capable of being delayed without compromising safety or producing irreversible and material long-term negative impacts on Ontario Hydro operations or on the ratepayers."**

OM&A Expenditure Reduction

In a more specific instance of the general point made in proposed Recommendation #5, it is submitted that the Board should recommend as follows:

> **"30. That Ontario Hydro's Board of Directors should require its management to budget for and deliver a 5% overall reduction in the projected OM&A costs for the 1993 year. Such reduction should not include accounting changes or deferrals of actions that would otherwise impact rates in future years, but should be limited solely to real dollar savings. This reduction implies a reduction in revenue requirement as well, totalling $115 million."**

Nuclear Operations

Problems with the heavy OM&A increases in Nuclear Operations are dealt with in #30 above. However, it is submitted that to provide focus the Board should recommend as follows:

"31. That Ontario Hydro should, in its budgeting process for the 1993 year, pay special attention to reducing the increases in the Nuclear Operations budget and staffing levels."

Compensation Gap

The Board should recommend as follows:

"32. That unless Ontario Hydro can achieve greater employee productivity than external reference communities, Ontario Hydro should respond to the wage gap between its employees and those in external reference communities by a more aggressive program of narrowing that gap. To this end, Ontario Hydro should prepare and file with this Board in HR 22 a plan to improve productivity and/or reduce the compensation gap so that the staffing costs of Ontario Hydro relative to employee productivity are, in the immediate future, brought into line with external reference communities."

VII. DEPRECIATION

Darlington In-Service Dates

The Board should recommend as follows:

"33. That Ontario Hydro reduce its depreciation expense for 1992 and 1993 to reflect the further Darlington in-service delays reflected in Recommendation #25."

Low-Level Nuclear Waste Disposal

It would appear to us to be self-evident that some provision for the disposal of low and intermediate level nuclear waste is appropriate at any time that such waste is being created by nuclear generation, and in this respect we agree with the opinion expressed by Hydro's Chairman in his evidence. Therefore, it is submitted that the Board should make the following recommendation:

"34. That Ontario Hydro reinstate the $14 million depreciation expense in 1993 for low and intermediate level nuclear waste disposal."

Capital-Intensive Generation

It was apparent from the evidence that the significant short-term rate shocks are a function of the early impacts of new capital-intensive generation. What was unfortunate is that the Board was not provided by Ontario Hydro with the benefit of background information on the relevant accounting and structuring considerations that drive or influence those impacts. Thus, the Board is not able to seek creative solutions to this ongoing problem. We propose that the Board make the following recommendation:

> **"35. That Ontario Hydro prepare a report for HR 22 on alternative methods of recording the costs of capital-intensive generation, including consideration of using other depreciation methods, alternative accounting techniques, or alternative ownership structures that better match the costs of generation to the benefits. The report should detail both the short-term and long-term impacts of the options, and the accounting and other rules that could influence the decision."**

VIII. BORROWING PROGRAM

We have no comments on this chapter.

IX. NET INCOME AND ACCOUNTING POLICY

Voluntary Nature of Rate Increases

In addition to ameliorating average increases in energy services costs, demand management programs also have the effect of making the impact of rate increases increasingly voluntary. Where aggressive demand management reduces the involuntary or confiscatory aspects of rate increases for all or some customer groups, that information could assist the Board in its deliberations. It is therefore submitted that the Board should make the following direction:

> **"36. That Ontario Hydro should include in the information filed by it with the Ontario Energy Board at its annual rate hearings, and in the information provided by it to its own Board of Directors in the final establishment of rates, appropriate information detailing the availability of demand management and other load reduction options to specific customer groups, so that this Board and the Ontario Hydro Board can establish rates that reflect the voluntary nature of increases in electricity costs for some or all customer groups."**

Withdrawal From the Reserve

Hydro may be in the most precarious financial condition it has been in several decades. Among the most important of the submissions in this final argument is our proposal that the Board recommend as follows:

> **"37. That Ontario Hydro should establish its net income target for 1993 on the basis that there will be no withdrawal from the Reserve for Stabilization of Rates and Contingencies."**

Major Accounting Policies

There exists no background document on major accounting policies of Ontario Hydro impacting on rates, and as a result the annual evidence on accounting changes presents a fragmented and less than useful picture. Hydro can and should remedy this. It is submitted that the Board should make the following direction:

> **"38. That Ontario Hydro should prepare a report to be tabled in HR 22 on the impacts of its major accounting policies on rates in the short term and long term. Each accounting policy that has a $10 million or more potential impact on revenue requirements in any year should be listed, with all alternative accounting policies and their potential impacts."**

Rio Algom Provision

Despite the fact that this recommendation was made last year and rejected by Ontario Hydro, we propose that the Board make the following recommendation:

> **"39. That Ontario Hydro commence amortizing the $450 million Rio Algom loss in 1992, to continue over a period of ten years."**

Manitoba Purchase

Given the potential significance of the Manitoba cancellation costs in the rate year, and the current challenges of the Manitoba contract ongoing at the EAB, it is submitted that the Board should make the following recommendation:

> **"40. That Ontario Hydro make a provision of $20 million in 1993 for the potential loss associated with failure to gain approval for the Manitoba transmission."**

Contingency Amounts

Hydro's rationale for failing to include any continency in its 1993 figures is that the 1993 uncertainties are evenly balanced. These submissions, if implemented, would recognize some of the uncertainties explicitly, and leave the unrecognized uncertainties unevenly balanced with a strong negative tendency. To adjust for this, it is submitted that the Board should make the following recommendation:

> **"41. That Ontario Hydro should include in its 1993 projections a contingency amount of $50 million to properly account for uncertainties with a net negative impact on net income."**

In general, contingency amounts appear to be approached on a very ad hoc basis at Ontario Hydro. We therefore submit that the Board should make the following recommendation:

> **"42. That Ontario Hydro should establish a formal policy with respect to the inclusion of contingency amounts in its accounting and rate-setting projections, and should table that policy, together with a review thereof by their auditors, to this Board in HR 22."**

Revenue Requirements

The submissions set forth above result in a number of changes to revenue requirements and to the rate increase proposed. Appendix D is a detailed calculation of revenue requirement and rate increase as a result of these proposals.

It is submitted, in conclusion, that this Board should make the following recommendation:

> **"43. That Ontario Hydro should set its 1993 revenue requirement at $8.931 billion, resulting in net income of $572 million, a rate increase of 11.85% and an increase in the bill of an average residential customer of 8.44%."**

X. PROPOSED RATES

Rate Principles

In light of Hydro's comments on the fairness of having generation-related rate shocks borne more heavily by those that asked for the generation to be built, it is submitted that the Board should make the following direction:

> **"44. That Ontario Hydro should prepare for HR 22 a report on the general policies that should be applied in establishing the rates for specific customer classes. The report should deal specifically with issues of economic impact, fairness and intergenerational equity, and should particularly analyze the policies appropriate in determining who bears the burden of rate shocks due to new generation."**

XI. EXECUTIVE COMPENSATION

We have no comments on this chapter.

Costs

Given IPPSO's involvement in the hearing, and the nature of the organization, it is submitted that this Board should award IPPSO 100% of its duly incurred costs of participation in the hearing.

All of which is respectfully submitted.

Jay C. Shepherd
Shepherd Associates
Solicitors for the
Independent Power Producers' Society of Ontario

EXECUTIVE SUMMARY OF AMPCO

The purpose of this document is to provide the Ontario Energy Board with a brief summary of the arguments and a complete list of the recommendations proposed by AMPCO.

In reading this summary, it is important to keep in mind that reference to AMPCO's entire Final Argument must be made for a complete understanding of AMPCO's position.

This summary follows the order of the chapters in the main submission. AMPCO's key recommendation is that:

> **"Hydro freeze rates for 1993 at 1992 levels. This means no rate increase for 1993."**

1. INTRODUCTION

The Trend of Rising Hydro Rates

The evidence presented in HR 21 leaves no doubt that the trend of rising Hydro rates will discourage investment in Ontario. The trend of Hydro rates deteriorating on a competitive level with rates in other jurisdictions has been ongoing in Ontario since 1985 and the proposed all customer average rate increase of 8.6% and the municipal and direct customer rate increase of 9.1 % for the 1993 rate year is well beyond the current and projected levels of inflation. Evidence submitted to this Board by Board Staff, (Ex. 2.2.1 p. 1) prepared by Dr. Ernest B. Stokes of WEFA Canada, an international economic consulting and forecasting firm, projected that CPI inflation for 1992 would remain below 2.0 % and just under 3.0 % in 1993.

Between 1986 and 1992 AMPCO's evidence showed that Ontario Hydro's rates to large industrial customers have increased at a rate substantially in excess of those charged by other Canadian utilities. In fact, the recent rate increases to all classes of customers in Ontario have been excessive. The evidence clearly disclosed that consumers of electricity can simply not afford to absorb another rate increase for the 1993 rate year after absorbing an 11.8% rate increase in 1992 and an 8.6% rate increase in 1991.

Hydro's Battle Against Increasing Costs

Hydro has indicated that its proposed 1993 rate increase reflects "a concerted effort to keep costs as low as feasible while planning for the achievement of target financial performance by 1995." (Ex. 1.1.0, Main submission p. 1 para 4.) Hydro also indicated through the evidence of Ms. M.S. Ng, Manager, Short Term Financial Planning, Finance Branch, Ontario Hydro, that the cost of bringing Darlington into service in August of 1992 accounts for 6.4 % of the 8.6 % projected rate increase. Mr. Russell, Director, Corporate Financial Planning & Reporting, Finance Branch, Ontario Hydro, said Hydro has limited flexibility when it comes to further cost reductions and points out that a high percentage of its cost structure is the result of fixed charges. However, Hydro has acknowledged that further efforts will be made at cutting and controlling costs prior to the finalization of the 1993 rate in the Fall of this year.

AMPCO urges Hydro to make continuing efforts to control costs within its own organization and cut costs and expenditures. AMPCO submits that cost control and cost reduction are the most vital ingredients in Hydro's planning process to eliminate any rate increase in the coming rate year and to keep future years' rate increases at a minimum. While AMPCO does not claim to have all the answers that would enable Hydro to reduce its costs in an unprecedented fashion, AMPCO submits that its recommendations tend towards the realistic achievement of this objective.

AMPCO submits that Hydro must cut its short-term variable costs and long-term fixed costs, increase its productivity and enhance its overall efficiency so that it can supply power to its customers at the most competitive prices.

In the past there is no question that Hydro's competitive rates attracted business to Ontario. Mr. Allen Lambert, one of Ontario Hydro's Executive Compensation Panel witnesses, testified to that very fact. AMPCO submits that unless Ontario Hydro's rates remain competitive, industry will have less incentive to make Ontario its preferred choice for investment or location. The loss of industrial opportunities in Ontario will undermine the Ontario economy and will have profound impacts on the Ontario labour force, employment levels and ultimately the province's credit rating.

The AMPCO Focus

AMPCO chose to focus and concentrate its efforts and inquiries in HR 21 on OM&A and Capital costs and to a lesser degree on issues surrounding economics and load forecasting, depreciation, interest expenses and industrial energy management programs. AMPCO focused on OM&A because these costs have escalated far too much in recent years. The strategy pursued in HR 21 by AMPCO was a departure from the approaches taken in HR 20 and HR 19. In HR 19, AMPCO attempted to take a more comprehensive approach and endeavoured to review Hydro's submission in detail. In HR 20, AMPCO participated as an observer. AMPCO pursued the more focused approach in HR 21 because it reduced the possibility of overlap and duplication with other parties and would therefore be of more assistance to the Board by providing a more concentrated effort in limited areas.

AMPCO presented two witness panels representing distinct industrial sectors and a unique industrial region. The Sectoral Panel, AMPCO's Panel 1, included Mr. Frank Pickard, the CEO and President of

Falconbridge Mines, the largest purchaser of electricity in the Province of Ontario; Mr. John Miles, the President and Chief Executive Officer of Slater Steels, Hamilton Speciality Bar Division, and Dr. Larry Murphy, an economist and financial analyst. The Regional Panel, AMPCO's Panel 2, was designed to represent a microcosm of the problems faced by the entire Ontario industrial sector. This Panel was composed of representatives of two industries in the Niagara Region, Mr. Lionel Hardy, representing UCAR Carbon Canada in Welland and Mr. Ralph Powell, the President of Washington Mills Electro Minerals Corporation and Washington Mills Ltd. in Niagara Falls.

Both AMPCO panels were intended to provide real value to the Board by making clear the serious problems faced by major Ontario electricity consumers who rely on intensive energy use for their operations.

The members of both of AMPCO's witness panels spoke of the considerable efforts made by Ontario industry to reduce their costs, improve their productivity and enhance their energy efficiency to remain competitive in tough economic times. The particular efforts of Ontario industries to remain competitive and their fight for continued viability was emphasized so that Hydro and this Board would be cognizant of the reliance Ontario Industry places on Hydro's urgent efforts to do the same.

AMPCO submits that Ontario Hydro's productivity performance has fallen in the 1980s. As such Hydro's ability to control its costs has also deteriorated. AMPCO submits that weakening productivity performance and increasing costs leads to excessive rate increases like the one proposed for 1993. Rising rates are also a reflection of falling productivity.

In making this submission AMPCO reminds the Board that any increase in the 1993 rates coupled with a continued economic downturn in Ontario will threaten the survival of Ontario industries as was attested to by every witness presented on AMPCO's two witness panels.

II. ECONOMICS AND LOAD FORECASTING

The Effect of Lower than Projected Sales and its Relation to Electricity Pricing

An increase in the price of electricity tends, to a somewhat indeterminate extent, to reduce sales. Ontario Hydro recognizes this causation, and models it specifically in the Error Correction model which is the basis of the rate year forecast (Ex. 2.1.5, May 11 Update, Appendix 1).

The evidence before the Board shows that sales affect price and that price affects sales, but Ontario Hydro does not use price to influence demand.

Below forecast loads and the Relationship to Increasing Unit Cost Pressures

The evidence before the Board suggests that an unstable equilibrium exists which is liable to result in a vicious cycle characterized by increasing costs coupled with decreasing demand each reinforcing the other. However, unlike the unstable cycle described above, the corresponding effect which will occur if demand should grow rapidly and loads increase resulting in the construction of new capacity at higher cost will tend to drive costs and therefore prices higher.

Demand Management Expenditures and Their Relation to Unit Cost Increases

It is AMPCO's submission that in the past the publicly owned utilities such as Ontario Hydro and TVA operated at an equilibrium point which was characterized by high consumption and low unit costs. The trend towards demand management appears to be moving Ontario Hydro toward an opposite equilibrium point, one which is characterized by lower consumption and higher unit costs.

In the present circumstances, however, to the extent that recession-depressed demand has been responsible for increasing unit costs, today's hard-pressed consumers are being penalized for the (uncertain) benefits that may accrue to future consumers.

It is AMPCO's submission that no further growth in demand and a reduced rate of annual energy consumption for the balance of 1992 and for the 1993 rate year will force Hydro to increase prices to achieve its target net revenue level. AMPCO is further concerned that in an effort to ensure a target revenue, price increases will drive demand down even further. If demand management programs are successful in reducing demand further, the effect might be to eliminate demand growth for the next five years.

III. ENERGY MANAGEMENT

AMPCO submits that the potential of all demand management programs should be analyzed more thoroughly with the objective of elimination of certain programs to achieve and improve equity across the industrial sector and across all three sectors, the industrial, commercial and residential.

Issue 1 - The limited Ability of Industry to Participate in Demand Management Programs

Direct evidence by AMPCO witness panel members made it clear that the potential for demand reduction through demand management is substantially less in the industrial market sector than it is in other sectors.

Issue 2 - The need for More Research in the Industrial Sector

The evidence at HR 21 disclosed that in the industrial market sector in 1991 Hydro achieved considerably higher energy efficiency resulting from load saved than was targeted. However, the industrial load shifting results were only about half of what were targeted.

AMPCO submits that only through additional research will Hydro be able to accurately determine why actual results for industrial load shifting in 1991 fell below target.

IV. NON-UTILITY GENERATION

AMPCO made no submissions pertaining to NUGs and asked no questions of any members of Hydro's NUG witness panel. The reason for this was based on AMPCO's pre-determined strategy to focus on a more limited range of issues and its primary interests:

(i) to ensure that rates are as low as possible; and
(ii) to ensure a continued reliable supply of electricity.

AMPCO's only comment and recommendation respecting NUGs is focused on ensuring that Hydro maintain sufficient flexibility to accommodate future NUG facilities in an expeditious and cost efficient manner if they become necessary.

V. FUEL AND FUEL RELATED AND SECONDARY SALES

Hydro is producing Heavy Water at a capacity well beyond what is required for its immediate loss make-up requirements. AMPCO submits that maintenance of a 300 mg reserve is reasonable but believes that an additional allocation of 1,000 megagrams for risk management is unnecessary.

AMPCO submits that it would be more cost effective to reduce heavy water production to lower levels in the short term and if necessary, readjust the level of production upon finalization of the business planning process and the conclusion of the Demand/Supply Plan hearing.

VI. OM&A AND CAPITAL

Issue 1 - The Need for Total Factor Productivity Measures

Recommendations put forward under Cresap suggested that CEA productivity and performance comparisons should be made annually and that these CEA comparisons should include Total Factor Productivity and Labour Productivity. Additionally, the report recommended that Ontario Hydro should compare itself with a broader group of utilities for the purpose of measuring performance and productivity.

AMPCO submits that measures of the kind mentioned above and recommended in the Cresap report are crucial and Ontario Hydro should implement this recommendation and should engage in annual CEA comparisons which include Total Factor Productivity and its underlying components including Labour Productivity.

AMPCO submits that use of the Total Factor Productivity measure provides an accepted basis for performance comparisons over time and provides the appropriate context for the use of individual factor productivity measures such as labour productivity. The use of external standards of efficiency is essential to give direction to the establishment of corporate performance targets at Ontario Hydro. The evidence presented by AMPCO clearly demonstrates that there has been a significant deterioration in Ontario Hydro's total factor productivity compared to either the CEA composite or an efficient utility such as Transalta.

It is AMPCO's submission that only through the use of corporate productivity measures will Hydro be provided with information which will assist it in making decisions to stop and possibly reverse the deteriorating trend in Ontario Hydro's performance.

Issue 2 - Restructuring of the Continuous Improvement and Quality Improvement Programs

AMPCO is concerned that the continuous and quality improvement programs lack direct central control and their implementation is subject to the independent desires of the branch supervisors. AMPCO is also concerned that no specific monitoring mechanism has been established to determine if improvements made in work processes, performance or productivity are a direct result of the continuous or quality improvement programs. AMPCO submits that improvements should be significantly reflected in reduced costs.

Issue 3 - The Need to Amend the Mid-Term Agreement, PW-46

The mid-term agreement signed between Ontario Hydro and CUPE Local 1000 is designed to foster a new spirit of co-operation between Hydro and its employees in the CUPE bargaining unit. AMPCO is concerned that an impasse could occur in the future if large staff reductions are contemplated and is troubled by the fact that no specific arbitration mechanism has been included in the agreement to resolve or determine just such an impasse. AMPCO applauds Hydro's efforts to foster a greater spirit of co-operation between Management and its unions. However, AMPCO is concerned that without a specific arbitration clause in the agreement to resolve what appear to be unresolvable disputes or differences of opinion between Hydro management and the CUPE union, cost effective and progressive changes to the business practices of Hydro may be indefinitely delayed or frustrated.

AMPCO submits that the existence of an arbitration mechanism would also act as an additional incentive for both management and the union to negotiate a settlement.

IPPSO's Request for a Mini-Hearing on Bruce A Retubing and Rehabilitation

It is AMPCO's position that no evidence has been led by IPPSO demonstrating that there was any frustration of the ability of the Ontario Energy Board to deal with the issue of Bruce A expenditures as they related to HR 21 and the 1993 rate year.

AMPCO cannot accept IPPSO's contention that a separate mini-hearing is necessary on Bruce A expenditures. AMPCO is as equally concerned about escalating Hydro costs, particularly those related to OM&A. However, AMPCO believes that Hydro has provided enough data in HR 21 to enable a critical analysis of the legitimacy of the expenditures proposed for Bruce A for the coming rate year.

VII. DEPRECIATION

AMPCO submits that Hydro is producing heavy water in excessive amounts which are grossly disproportionate to that required for loss make-up. AMPCO also submits that the maintenance of this surplus or excess of heavy water results in exorbitant interest charges and total costs which could be significantly reduced by reducing production of heavy water.

Interest Expense Charges

AMPCO is concerned that the interest expense charges in maintaining the heavy water surplus reserve is excessive.

AMPCO submits that reducing heavy water will not only result in cost-effective production, but will also result in significant savings in interest payments arising from costs associated with storage of heavy water reserves. AMPCO submits that fixed charges associated with the operation of the Heavy Water Plant must be borne by Hydro no matter what level of production is chosen.

Hydro has indicated that it has low confidence that the heavy water plant can be mothballed and then restarted or that production at levels lower than full capacity would be cost effective. AMPCO submits that this opinion should be supported by a thorough study and report analyzing the various cost/benefit ramifications of the different options.

VIII. BORROWING PROGRAM

The Provincial Debt Guarantee Fee

During the course of the hearing, there was some discussion about the requirement that Hydro pay a guarantee fee to the Ontario Government and the possibility of Hydro requesting a waiver or reduction of this fee.

AMPCO submits that given the current economic outlook, the high level of rate increase projected and the high percentage of fixed costs which Hydro says it is unable to reduce, Hydro should formally request that the debt guarantee fee be revised downward or at the very least be deferred for the 1993 rate year. AMPCO would remind the Energy Board and Hydro that Hydro should act in the best interest of its customers and the financial situation of the Ontario government should not be a consideration that prevents Hydro from requesting a waiver or reduction of the debt guarantee fee.

IX. NET INCOME AND ACCOUNTING POLICY

Hydro's Approach to Achieving No Rate Increase for 1993

In its analysis of ways to achieve a zero rate increase Hydro has considered the impact of such a change solely as it relates to net income and the rate stabilization reserve fund (See response to Undertaking 9.3.15). AMPCO submits that a zero rate increase could be achieved by a combination of aggressive OM&A cuts coupled with reasonable use of the rate stabilization reserve fund.

An Alternative Approach to Achieve the Zero Rate Increase for 1993

The following table illustrates possible combinations of OM&A reductions and reasonable withdrawals from the reserve fund that Hydro might consider, based on tables 1.1 and 1-3 of the Main Submission and using SDR levels from Response to Undertaking 9.3.15, to achieve a zero rate increase for 1993. This is an illustrative example for Hydro's consideration.

TABLE 9-A

Year	Dom. Vol. (TWh)	Av. Dom. Rate Mills/ KWh	Com. Revs ($Mil)	Op. Costs ($Mil)	N.I. ($Mil)	Sec. Sales ($Mil)	RSRC Prov. ($Mil)
1992	135.0	60.05	8107	7656	522	70	50
1993	138.4	65.15	9017	8818	318	119	(254)
1993a	138.4	60.05	8311	8818	(318)	119	(890)
1993b	138.4	60.05	8311	8426	4	119	(568)

Conclusion

As Table 9-A illustrates, a zero rate increase policy does not have to impact entirely on net income. Significant reductions in OM&A costs combined with modest withdrawals from the rate stabilization reserve fund achieve the same goal.

X. PROPOSED RATES

Request for a Rate Freeze

AMPCO's basic contention is that Hydro's productivity should be improved dramatically in the same way that private industry has been forced to improve its productivity in response to economic conditions. Greater achievements of cost reductions can be realized by Hydro. Ontario industry and other consumers of electricity cannot afford a third consecutive year of extremely high Hydro rate increases. It is the submission of AMPCO that Ontario Hydro rates are no longer attractive to industry and investment and jobs will be lost if increases continue. Ontario industries made clear by their representation on AMPCO's witness panels that they would recommend that Hydro freeze rates for 1993.

Limited Ability of Some Industries to Participate in Real Time Pricing Experiment

If Hydro is serious about implementing cost-effective real time pricing and other time of use based pricing programs they should determine if some other program might better achieve Hydro's objectives in the industrial sector and ensure wider potential participation from among all of Hydro's 107 direct industrial purchasers.

XI. EXECUTIVE COMPENSATION

AMPCO believes that the salary levels provided to Hydro executives is adequate and AMPCO takes no issue with the remuneration packages as they now stand. However, AMPCO recognized that compensation at all staff levels is a legitimate concern and OM&A costs are driven by it. In order to ensure that adequate opportunity is provided to review the impact of organization (staff) performance and remuneration, a hearing be held every other year commencing in 1994.

XII. GENERAL POLICY

Issue 1 - The Timing and Scope of Rate Hearings

AMPCO submits that as the issues raised at each rate hearing are increasing in number, complexity and scope, Hydro and all the intervenors would be well served by the enactment of new legislation which would reduce the frequency of the rate hearings and would ensure that Hydro's major capital expenditures are given more appropriate and fuller consideration in a distinct set of hearings.

AMPCO does not feel it would be worthwhile to recommend the precise format of a revised hearing process as it believes that such a determination can only properly be made if it involves the input of all affected parties. As such, AMPCO would recommend only that the Government announce its intention to amend legislation to permit the necessary modifications to the existing process and expeditiously move to establish a working committee to ensure that the input of all interested parties is solicited and considered.

SUMMARY OF RECOMMENDATIONS PROPOSED BY AMPCO

1.1 Hydro freeze rates for 1993 at 1992 levels. This means no rate increase for 1993.

1.2 Hydro be directed to reduce OM&A costs by $692-million for the 1993 rate year.

1.3 Hydro be directed to exhaust all measures to reduce costs before making a larger use than now projected of the rate stabilization reserve fund to lower the rate increase.

1.4 The Ontario government appoint an independent external auditor to review Hydro's OM&A costs and recommend cuts to this budget over the next three years to ensure that subsequent rate increases can be held to a minimum and that positive contributions can be made to the rate stabilization reserve fund in subsequent years.

2.1 Ontario Hydro be requested to develop and produce more sophisticated simultaneous models to forecast total system load. The equations utilized would be more complex than the current single model equation now used but would more accurately recognize and account for price/demand elasticity.

2.2 Ontario Hydro be requested to develop and produce the above noted models measuring the demand for electricity on a quarterly basis.

3.1 Hydro review all of its energy management programs with an eye to eliminating ineffective demand management programs and those programs which may result in the indirect subsidization of commercial and residential energy management programs by the industrial sector.

3.2 Hydro undertake market research to determine the level if any of untapped potential for energy management savings in the industrial sector or the factors which limit participation beyond a specific aggregate level by the industrial sector. That this research also include a consideration of methods to ensure fairness and equity on the availability and ability of all industries to participate in demand management programs.

4.1 Hydro be directed to complete, prior to the end of this year, a detailed planning strategy as it relates to the ability to bring Non-Utility Generation on stream in the shortest and most cost effective time frame in the event of an earlier than anticipated need for new supply as a result of a faster than expected surge in demand.

4.2 Hydro develop a short term contingency plan for the NUG division that takes into account the possibility that Darlington's in-service date is substantially delayed.

5.1 Ontario Hydro reduce its heavy water production schedule at its heavy water plant to 50 % capacity between now and 1996.

5.2 Ontario Hydro eliminate from its production schedule for heavy water, plans to produce 1,000 megagrams of heavy water for risk management.

6.1 Ontario Hydro immediately begin a process to review its corporate productivity and performance using a total factor productivity methodology as developed by the CEA, recommended by Cresap and outlined in the evidence prepared by Dr. Larry Murphy on behalf of AMPCO.

6.2 Ontario Hydro use the total factor productivity review process to set objectives for performance and to identify and implement OM&A budget cuts which will lead to greater cost control and improved productivity measures at Hydro.

6.3 Savings achieved from OM&A budget cuts and improved productivity be directly reflected in future Hydro rates and not earmarked for rebuilding reserves.

6.4 Ontario Hydro's continuous improvement program and quality improvement program be restructured so that clearly defined targets linked to overall corporate productivity goals are set by the Senior Management Committee and the results from continuous improvement are measured against these targets every quarter.

6.5 The mid-term agreement, Number PW-46, dated November 14, 1991 titled "Purchased Services" and signed between Ontario Hydro and CUPE Local 1000 be reopened for the purpose of inserting an arbitration clause which sets out a mechanism for resolving disputes in the event that Hydro and CUPE Local 1000 are unable to agree and reach an impasse about implementation of particular decisions respecting purchased services.

6.6 Ontario Hydro be directed to further explore other options including contracting work out as a means of reducing OM&A costs.

6.7 The request by the Independent Power Producers' Society of Ontario ("IPPSO") that a dedicated mini-hearing be held in the Fall of 1992 on the upcoming expenditures on the Bruce A Nuclear Generating Station be rejected.

7.1 Ontario Hydro produce a full cost/benefit analysis and report on the feasibility of mothballing its heavy water plant.

8.1 Ontario Hydro request that the Ontario government waive the provincial debt guarantee fee or in the alternative, defer or reduce the guarantee fee for the 1993 rate year.

10.1 Hydro's 1993 rates be frozen at the 1992 level.

10.2 Hydro recognize the limitations of several direct industrial customers to participate in the Energy Management real time pricing program experiment and provide a broader range of pricing options which reflect systems costs and develop a means of structuring these options in conjunction with the industrial sector.

11.1 A hearing be held every other year commencing in 1994 in which the impact of organizational performance and remuneration at all staff levels be reviewed. The terms of reference of this review shall include an in-depth review of the non-compensation issues such as job security and internal reassignment policies of Hydro.

12.1 The Ontario Government announce its intention to enact legislation to provide that Ontario Hydro rate hearings be held once every two years commencing in 1993 for the 1994 and 1995 rate years.

12.2 A committee be struck by the Provincial Government including representatives from the Energy Board, the Ministry of Energy, Hydro and interested full-time intervenors to prepare formal recommendations on a restructured rate hearing process. The recommendations of this committee should be reviewed, finalized and implemented prior to the commencement of HR 22.

13.1 Hydro pay AMPCO's reasonably incurred costs arising out of these proceedings.

EXECUTIVE SUMMARY
OF ONTARIO HYDRO

Chapter 1 - INTRODUCTION

This argument sets out Hydro's position and its supporting rationale, in relation to the issues addressed in HR 21.

Hydro believes that it responds fully and effectively to the requirements of the rate review process. Hydro has put before the OEB and parties to the hearing, information and analysis covering the broad scope and complexity of its business and in response to other parties' interests.

In addition, Hydro responded to the large number of interventions and associated evidence brought to the OEB this year for review. The combination of Hydro's case, a special review, and specific interests of the parties placed heavy demands on all participants in the hearing.

Hydro continues to face operating and external uncertainties. These are especially challenging as major assets are brought into service in a time of slow economic recovery.

Hydro continues to seek to meet customer and public requirements and to manage more effectively and efficiently.

Hydro submits that throughout the HR 21 rate review, it has demonstrated continuing commitment to maintaining the highest levels of customer and public service.

Chapter 2 - ECONOMICS AND LOAD FORECASTS

The economic forecasts presented in Ex. 2.1.3 Update should be accepted for planning purposes.

Hydro updates its economic forecasts at regular intervals each year. A consensus is taken at those times and includes the most recent forecasts available.

Hydro has considered probable developments in both the area of constitutional resolution and North American Free Trade. These are included in the economic outlook for 1992 and 1993.

The Load Forecast contained in the April 1992 Update to Exhibit 2.1.5, The Short Term Load Forecast Report, is appropriate for planning purposes, given Hydro's economic forecast and the load data available at the time. While Hydro's position is that its economic growth forecast is the appropriate one to be used for planning purposes, that does not preclude the possibility of a revision to the load forecast at the time of rate finalization. In preparing the load forecast for rate-finalization, Hydro will, as in past years, take into account the most recent load data and the 1992 Customer Survey.

Hydro's methodology for producing the Basic and Primary Load Forecasts is appropriate. Hydro is always looking for ways to improve the quality of its load forecast methodology and so will investigate several of the suggestions made by intervenors.

Chapter 3 - ENERGY MANAGEMENT

Hydro has embarked on a demand management program to meet the electrical service needs of its customers in an economic and efficient manner. As is the case with the majority of North American utilities, Hydro uses the Total Customer Cost Test (TCCT) as a screen for cost-effectiveness, ensuring that demand management options, on the basis of their lifecycle energy and capacity savings, cost less than supply options. Energy management is Hydro's top priority for meeting Ontario's future electricity needs. Hydro's goal is to obtain as much economic demand management as possible by providing a broad range of programs to all customer classes.

Hydro's MW reduction targets for the rate year are appropriate and achievable. The budget forecast for 1993 is appropriate and consistent with achieving these targets and provides a suitable balance between short term achievement of results and long term, sustainable savings. Hydro views energy management as an essential part of the corporation's business which cannot simply be arbitarily reduced or cut off without long term consequences.

Hydro's program mix is consistent with the goal of achieving as much economic demand management as it can with a broad menu of programs that allow all customers the opportunity to reduce their energy bills. Hydro programs are appropriately designed, and take equity, program uptake targets and rate impacts into consideration.

Hydro's non-incentive demand management costs are appropriate and reflect a balanced mix between incentives and information that is consistent with effective demand management programs. Non-incentive costs include technical and market research, cost-effectiveness screening, monitoring and evaluation activities, and long term research to ensure viable future programs.

Incentives offered through Hydro's programs are designed to overcome market barriers to the adoption of demand management measures. Hydro assesses the level of incentives for each program to moderate the proportion of payments going to free riders, to address cross-subsidization and equity concerns, and to ensure that customers have an interest in the efficiency measure which enhances permanence and commitment. Hydro adjusts incentive levels as necessary to ensure program effectiveness.

Hydro has established a comprehensive monitoring system to measure demand management results. The MW results reported and the system itself are audited each year by an independent consulting firm, whereby problems can be identified and improvements are made. Steps to increase the level of evaluation of Hydro energy management programs have been taken and efforts to develop integrated evaluation techniques are under development.

With the passage of Bill 118 on June 25, 1992, Hydro is now permitted to offer demand management programs which focus on fuel substitution. Hydro is continuing to consult with stakeholders affected by fuel substitution to determine important factors such as technical feasibility, cost effectiveness, equity and marginal cost of other fuels. Hydro recognizes that market factors are already encouraging natural fuel substitution.

Hydro has demonstrated that it is working actively with municipal utilities and other interested groups both in a formal manner, under signed agreements; and informally, in program consultation, to develop and deliver demand management programs to customers.

Hydro has extensive documentation on its demand management program and has made every effort to provide all relevant documentation requested for the review by the OEB and intervenors.

Hydro has taken action on the Porter Commission recommendations and will continue work in these areas.

Chapter 4 - NON-UTILITY GENERATION

Non-Utility Generation (NUG) is one of the supply options considered by Hydro to meet system requirements in a cost effective manner. Hydro gives the development of economic NUG a high priority as a viable supply option.

Within the context of meeting supply needs the basic principles of Hydro's corporate strategy for NUG are: to give preference for generation using renewable resource based and high-efficiency conversion technology; to increase planning flexibility; to address system requirements; to minimize rate impacts; and to support customer/industry initiatives .

The identification of the potential surplus capacity situation resulted in the need for a detailed review of system requirements and the entire NUGs program . To manage the acquisition of NUGs within the small window of capacity that can still be accommodated on the system Hydro has introduced interim measures. Which appropriately addressed the changed circumstances. Hydro will continue to accept purchases from NUG 5 MW or less and all customer driven load displacement projects. For projects greater than 5 MW Hydro will only accept hydraulic and special projects. These measures will be re-evaluated and revised as required.

By a lost opportunity Hydro assumes that a customer is proceeding that offers the opportuinity for creation of a cogeneration facility, but the electricity geneartion foregone due to lack of system need. Hydro recognized when it formulated its interim measures that lost opportunities might occur and, in the context of limiting system need, designed the measures to minimize lost opportunities as well as any potential rate impact on Hydro customers.

Hydro believes that one of the important benefits of NUG is that it is a short-lead time option, and therefore that NUG can and should be acquired at times when it is needed to meet system requirements.

Hydro is working expeditiously to identify specific criteria that would apply for qualifying special projects. The criteria will be developed based on the principles outlined in the corporate strategy.

In December 1991, Hydro asserted its right to exclusive supply to municipal electric utility by rescinding the policy of giving municipal utilities the first option to purchase NUG located within their jurisdiction. As the supplier of power to the municipal electrical utilities, Hydro's position is that it is inappropriate for one utility to have the advantage of lower cost power from NUG within its service area resulting in higher rates for the other utilities and ratepayers in Ontario. Hydro is reviewing this policy to develop a position which is fair to utilities, suppliers, and all electricity customers in Ontario. Participants of this review include the MEA and the government. The legal issues involved also need to be considered.

Hydro is verifying transmission requirements associated with the development of future NUG. Activities are currently underway to support the review and assessment of appropriate actions Hydro can pursue to improve transmission access, for NUG.

The NUG Division budget and staff requirements have been approved for 1992 and are appropriate. The 1993 resource levels will be set through the business planning and budgeting process.

Hydro believes that performance measures are a critical component of developing a successful NUG program, and as a result this is being reviewed as key aspect of the broader review of NUG strategy.

Hydro continues to develop and review NUGprograms to ensure that they facilitate the appropriate acquisition of NUGto meet system requirements.

Hydro's position continues to be that competitive bidding will be considered for future NUGs capacity solicitation. However, given the current surplus capacity situation Hydro does not need additional generation .

The approach used by Hydro to determine purchase rates for NUG has not changed since HR 20. Hydro bases its purchase rates on avoided cost principles applied uniformly throughout the Corporation. A ten percent rate premium is added to the basic avoided cost to reflect Hydro's preference for the application of renewable resources and high efficiency conversion technology to arrive at the project specific avoided cost. The principles of avoided costs are being reviewed as a fundamental component of the Environmental Assessment Board's hearing on Hydro's Demand/Supply Plan (DSP) and are excluded from HR 21. Hydro's position is that no changes should be made to the preference premium at this time.

The Power Corporation Act (PCA) of the Provincial Legislature supports the concept of Public Power. Hydro is the largest North American public power electrical utility with a complex generation and energy services mix. Hydro's cost and debt structure are the product of its statutory framework including PCA and regular OEB reviews. The existing system of utility management and supply of electrical power has served Ontario well. Hydro continues to serve the province by providing a stable, secure, and reliable supply of power to all customers on demand. It has provided customers with low cost electricity based on the power at cost concept. It has not operated as a privately owned utility with its characteristic equity structure and where shareholders must gain a fair rate of return on their investment. Hydro has proven itself to be a financially healthy institution and has demonstrated social responsibility by operations which include demand management and environmental protection programs An entity structured like Hydro is, according to Dr. Ruff, in an ideal position to take advantage of all efficiency-improving opportunities, both those that are available to competitive firms and those that can be implemented only by a large utility such as Hydro.

Further Dr. Ruff stated, that to the extent that most if not all, of the generation is under common ownership there are a number of economically driven adjustments - whether it is dispatch or planning - that are done more easily by a monopoly such as Hydro becasue it controls the flows of cost and revenues.

(TPA) is a concept being advocated for electric utilities by Dr. Ruff and others. It is a concept that is only now being tried in one jurisdiction (UK) and considered by others. It is a long term energy policy issue requiring careful consideration by government, regulators, utilities and electricity consumers. Although the UK experiment has started there are unresolved problems and only short-term experience. The results are mixed and the jury is out on its benefit in the UK context. The proponents of TPA claim that the greatest benefit will accrue if TPA is implemented when new capacity is required. Hydro is not forecasting a need for new capacity for many years. Hydro's position is that there is no need to explore TPA further at this time.

Chapter 5 - FUEL AND FUEL RELATED SECONDARY SALES

Hydro is monitoring the progress of the Darlington commissioning and fuel damage investigation programs on an ongoing basis in order to work towards achieving its in-service and return-to-service dates. When circumstances develop which will prevent the achievement of a projected in-service date, a revised date is carefully considered based on Hydro's judgement of the actions required to meet the in-service criteria.

Darlington progress and plans are under continual reassessment. In particular, the ongoing testing program and review of results from Units 1 and 3 has resulted in an extension in the scope of the testing program beyond initial expectations. The scope of the testing program, and the resultant modifications that may be necessary, contributes significant uncertainty and will likely lead to some further delays in placing/returning the Darlington units in-service. The extent of these delays is dependent on the results of the ongoing test program.

Hydro continues to improve the accuracy of its nuclear forecasting process in particular by making corrections to the A station DAFORs.

Hydro is taking a number of significant initiatives to restore nuclear performance to target levels. These include:

- A comprehensive Quality Improvement Process .
- Rehabilitation of the A stations.
- A Nuclear Plant Life Assurance program.

Since the early 1980's Hydro has been moving to strike a better balance between planned and unplanned work. Pressures from both the Darlington fuel damage problem and boiler tube leaks at Bruce A and Pickering B may affect the energy output in 1993.

Hydro will continue to review the nuclear forecast and nuclear forecast methodology on an ongoing basis in order to improve the accuracy of both the short term and long term forecasts. Hydro supports the use of a variety of forecasting methodologies for short and long term forecasting. To that end, Hydro will continue to utilize a number of other forecast methodologies, including but not limited to, regression-based methods, as an independent check on the short term nuclear forecast. In addition, Hydro will continue to develop and improve the probabilistic forecast model for short, mid and long term forecasting for all nuclear stations.

Hydro will continue to sell surplus power and energy to increase net revenue and will also purchase whenever possible to reduce production cost and/or to meet system needs. As forecast of production from nuclear and fossil generation varies, the forecast of secondary sales and purchases will change in response to such variations in resource availability.

Hydro's acid gas emissions have always been below the acid gas limit as set by the Ontario government and Hydro will continue to respect all applicable laws and regulations in the future. Hydro's policy on the export of surplus electricity is to maximize the long term economic gain to the Ontario rate payers.

Hydro's fossil-fuelled facilities have been and will continue to be effectively and efficiently utilized. Fossil production in 1993 is currently forecast to be 24.0 TWh. However, fossil-fired generation is a swing resource and production could vary in response to changes in other resources or demand.

Hydro has taken steps to improve the accuracy of the forecast fossil-fuelled reliability indices in recent years and submits that the forecast of fossil-fuelled resource reliability indices for 1993 is appropriate. The forecast of fossil-fuelled resource reliability indices are regularly updated and past performance as well as future programs are reflected appropriately in forecasts.

Hydro's forecast of hydraulic resource reliability indices for 1993 is appropriate. Hydraulic resource reliability indice variances from forecast in recent years have not been due to forecasting error but have been the result of management decisions that maximized efficient and economic allocation of OM&A resources.

Hydro dispatches generating resources on an economic basis with the intent to minimize running costs within operational limitations, and applicable regulations (including environmental regulations). This method of generation dispatch is appropriate and no change is warranted at this time.

Hydro considers all available short term supply options and control actions including NUG in its short term contingency planning.

Chapter 6 - OM&A AND CAPITAL

Hydro's current business planning and budgeting process has been improved and refined each year since it was initiated in 1986. At its current stage of evolution, Hydro believes the business planning process has provided an improved framework within which major programming directions and short-term budgeting guidelines are established. These programming directions are developed within a framework of program results in key strategy areas, financial performance, and future rates. For 1992 the process has been changed to an integrated fall business planning and budgeting process in order to allow time to review the consistency of capital plans with the Demand/Supply Plan Update.

Controlling costs is one of the highest priorities of Senior Management at Hydro. Hydro must at the same time address the operational priorities it faces. Hydro undertakes critical reviews of work programs at both the branch and corporate level in determining program priorities. During these reviews, factors that affect resource allocation include changes in external environment, internal operational circumstances, and the business issues facing the Corporation in the context of the corporate strategy for the 1990s. Hydro looks for opportunities where productivity can be improved, discretionary expenditures can be reduced, and where work can be reduced/deferred in the short term without significantly impacting work results expectations. These trade offs do not come without some risk. In doing so, we attempt to minimize the impact that these cost reductions could have on longer term performance results. Arbitrary decisions in resource allocation are not helpful and do not ensure that required deliverables are met.

Hydro has taken actions to control its costs, and has provided the results of these actions. Actions taken to control costs as identified in direct evidence include establishing tight resource ceilings, having branches identify the impact of further cuts (5 per cent) from ceilings, budget cuts which were taken in the fall budget review, and further budget cuts which were taken mid year through 1992. The results of these actions are OM&A reductions for 1992 of $127M plus a further $32M and for 1993 reductions of $145M.

The need for the required OM&A program level and the changes or increases in program costs have been identified annually and fully reviewed in this and in previous hearings. More than half of the 1993 increase in OM&A program is due to the impact of Darlington coming in service, the remainder being for transmission restoration and demand management initiatives.

Hydro reviews staff level changes as part of the budget review process. Staff changes are a direct result of changes in work program requirements. The staff requirements and the reasons for staff changes have been presented annually and justified in Staff Level Information Ex. 6.1.10, and fully reviewed in this and previous hearings.

Hydro has testified that through an ongoing continuous process it looks at the requirement for staff services. If there is not a demand for a particular work activity, we will take whatever action is appropriate. There are a number of ways such as attrition, retraining, redeployment to other work program areas, to cope with staff reductions where they occur. Hydro rejects the notion that we must shrink permanent staff as an end in itself.

In establishing productivity measures it is important capture the major underlying factors for assessing achievement of corporate objectives. Hydro believes this is best achieved by measuring its productivity, relative to other utilities, by business segment. This approach is illustrated in Ex. 6.6.28 and 6.8.59. Hydro does not make use of Total Factor Productivity (TFP) at an aggregate level because of its inherent weaknesses as a comparison to other utilities' performance. Hydro maintains that the fundamental nature of these weaknesses undermine the applicability of Total Factor Productivity as a tool for either establishing relative comparisons or for setting performance targets.

Hydro's annual performance is documented, published and submitted to the OEB as the Corporate Performance Report. The Corporate Report Card is an internal document intended to assist senior management in defining direction for business planning.

Hydro gathers information from the external community to the extent needed to support assessments of its performance relative to the reference community.

Hydro is making a concerted effort to improve working relationships with its employee representatives and to find better ways of resolving differences. This new approach is characterized by a spirit of cooperation and a commitment to examine ways to improve Corporate effectiveness and efficiency. As a management philosophy, Hydro is moving towards greater cooperation and employee participation. This is strongly underlined by the many continuous improvement initiatives that Hydro and its employees have undertaken. Some examples of the joint cooperative approach used by Hydro and the employee representatives include voluntary recognition of the Society to resolve the long- standing certification issue, the Purchased Services Agreement, the latest contract settlement with CUPE Local 1000, and an agreement on first contract negotiations with the Society.

Continuous Improvement is part of the corporate strategy to improve corporate effectiveness and efficiency. This is expected to produce gains and positively impact overall corporate effectiveness in the areas of:

- Operational Performance
- Financial Performance

- Employee Relations

As products and services are improved, corporate performance will improve as well as customer satisfaction.

Involvement of employees in improving the work processes is vital for the success of Continuous Improvement initiatives. This requires a high level of trust between employees and management. Therefore, many of the early initiatives have been aimed at improving the working relationships in the organization.

The Corporation believes that each Branch must develop initiatives that are best suited to the business needs of the Branch. Senior management will continue to support Continuous Improvement and to encourage the bottom up approach. However, the Continuous Improvement process is now at a stage when more strategic direction will help to better focus efforts on overall corporate priorities and results to be achieved.

Goals for Continuous Improvement initiatives flow from and are reflected in the various branch budgets and work programs. Monitoring the effectiveness of Continuous Improvement will be carried out within the budgetary framework.

Hydro will continue to seek, over the long term, reductions in the total compensation differential between the Corporation and its external comparison communities recognizing that this is achieved:

- through negotiations/problem-solving initiatives with the employee representatives;
- with arbitration awards being applied when negotiations fail; and
- with regard to internal relativity.

Hydro remains committed to effective performance-based compensation where practical.

The Purchased Services Agreement will enable Hydro to make effective decisions on contracting out work based on a thorough business-case review and with a commitment from the employee representatives to have work done effectively and efficiently in a spirit of cooperation and trust. Prior to the agreement, the issue of purchased services was not resolved to the satisfaction of Hydro or the employee representatives as decisions regarding contracting out were bounded by an arbitration award which prescribed fixed staff percentages as a basis for assigning work. This sometimes constrained optimum decision-making and affected Hydro's ability to provide effective services.

Hydro will not be a member of any of those organizations which have as their prime objective an advocacy role. Consequently it is not Hydro's intention to renew its membership in CNA next year not in IPPSO. Hydro will be reassessing its practice for providing seconded staff to such associations.

Hydro submits there is no evidence of a need to review its entire capital forecasting processes, as the major portion of past variances is attributable to one large project, i.e., Darlington. The reasons for changes to Darlington have already been reviewed by the OEB.

Hydro has in place a comprehensive audit program including operational audits. The Audit Committee of the Board of Directors reviews the proposed work program for future audits and the results of these audits. In addition, a wide ranging and comprehensive review was undertaken by Cresap three years ago. These activities, in combination with the annual activities of the OEB and the periodic activities of reviews such as the Environmental Assessment Board provide adequate examination of Hydro's activities.

Chapter 7 - DEPRECIATION

In the 1993 rate year, Hydro is producing heavy water for the future loss makeup needs of the existing system and for small sales. Hydro is not producing heavy water for risk management, large sales or for future nuclear stations.

Full production from Bruce Heavy Water Plant B is the most reliable and lowest cost method of meeting the heavy water needs of the existing system.

Production planning beyond the rate year, taking into account the Demand/Supply Plan Update, is underway as part of business planning.

At its July meeting Hydro's Board of Directors approved a plan for the management of low and intermediate level radioactive waste. This plan was the basis for the provision of $14 million originally included in Hydro's 1993 Rate Proposal but subsequently removed as part of an update filed June 12, 1992 pending further consideration by Hydro's Board. Hydro's position is that the above provision should be included in the 1993 Revenue Requirement.

Hydro has reviewed the need to establish a provision for the decommissioning and disposal of heavy water. Based on this review, Hydro has determined that the cost associated with decommissioning is relatively small and that a provision is not required at this time. Hydro will continue to monitor developments in this area as part of the deliberations of the Depreciation Review Committee (DRC).

As stated in Hydro's final argument to HR 20,

> "Hydro has a comprehensive and appropriate set of accounting policies, including those related to depreciation, which accord with Generally Accepted Accounting Principles, have the concurrence of Hydro's external auditors and are subject to review by the OEB during Hydro's annual rate Hearings. An expert from Coopers & Lybrand at HR 19 shared the view that Hydro's depreciation policies and practices are reasonable and achieve depreciation-related objectives.
>
> The Depreciation Review Committee (DRC), in making its recommendations, ensures conformance with the Corporation's depreciation policies through ongoing contact with Hydro's accounting policy group. The specific recommendations of the DRC are also subject to review by Hydro's external auditors as well as by the OEB at these hearings."

Hydro does not believe that a hard and fast materiality level for deciding on the need for removal provisions is required. Establishing of provisions for any kind of removal costs, such as for station rehabilitation removal programs, occurs on a program basis. The expertise and discipline derived from the DRC review process ensures that an assessment of the need for a provision takes into consideration all factors specific to a program and that this assessment is applied on a consistent basis across all programs.

Hydro has deferred consideration of those recommendations of the DRC that depend on Hydro's long-term Demand/Supply Plan (D/SP) pending the conclusion of the EAB hearing. The report of the EAB will reduce the uncertainty about this plan and will provide the appropriate basis for making related depreciation decisions.

A realistic and workable process for review of capital expenditures is in place. A special fall hearings are not appropriate and would be of limited benefit.

Thorough reviews of Bruce A expenditures have been done and were tabled at the OEB. Intervenors and the OEB have had and will continue to have opportunities to review the decisions of the Hydro Board including the ongoing monitoring, and evaluation pf Bruce A. This material will continue to be available for the rate review hearings before the OEB.

The present analysis indicates there is a long term economic advantage to taking the next steps in repairing Bruce A and provides reasonable assurance that the repair will remain economic in future changing circumstances.

There have been suggestions that expenditures be constrained by Hydro pending a public review. Hydro feels that this would not be in the interest of ratepayers. Hydro undertakes an annual formal engineering and financial review of the lives of its nuclear generating stations. The cost of the study of premature nuclear shutdowns in other parts of the world is not justified, since such as study would not materially improve the accuracy of Hydro's estimates of the lives of its own stations.

Chapter 8 - BORROWING

Hydro believes that the basis of the borrowing limit is appropriate and should not be changed.

Hydro already closely monitors capital markets both in terms of access or availability and costs. Markets are monitored continuously and appropriate strategies are developed so that the borrowing program that can respond to changing market conditions thereby ensuring that availability and costs are managed effectively. The 1992 financing strategy reflects this approach. In addition innovations undertaken by Hydro such as development of the Global Bond and Advanced/Deferred Rate Setting also reflect effective responses to changing capital market conditions.

Hydro believes that its current strategy of diversifying interest cost over the five quarters from the 4th quarter of 1991 to the 4th quarter of 1992 remains the most appropriate course of action. The approved strategy allows Hydro to deviate from this averaging process on a controlled basis if market conditions are judged to warrant such a change. Current conditions do not warrant a change to the averaging strategy at this time.

Hydro's rationale for the income and balance sheet threshold limits has been clearly outlined in the Foreign Exchange Management Policy. This policy was developed with the help of an external consultant and both the consultant and Mr. Chee gave extensive evidence during HR 20 on the rationale for thresholds required by the policy. The rationales for the specific thresholds for each year are reflected in the annual strategy reports and quarterly updates. The threshold for 1993 net income hedging was reviewed in the second quarter of 1992 and will again be reviewed for the third quarter. Hydro submits that appropriate risk management is currently being exercised.

The current criterion of 50 basis points for bond calls is regarded as reasonable by Hydro.

Hydro has established comprehensive performance measures for its current financing and foreign exchange management program. Performance is reported quarterly to the Finance Committee and the evaluations are outlined in each Quarterly report.

Chapter 9 - NET INCOME AND ACCOUNTING POLICY

The governing principle of Hydro's Interim Statement of Corporate Financial Policy on Net Income states that "Ontario Hydro shall establish net income to comply with the statutory requirement for debt retirement, to stabilize the pattern of rate increases, and to ensure the lowest long-term rates to customers while maintaining the financial soundness of the Corporation."

The policy defines financial soundness as "the ability to meet financial obligations and to withstand situations that have potential adverse financial consequences". The policy also states that "Ontario Hydro's financial soundness shall be maintained at a level that does not prejudice the Provincial credit rating and which maintains the ability of the Corporation to attract capital at competitive rates".

Hydro's proposed withdrawal from the RSRC is appropriate pursuant to Section 19 (2) of the Power Corporation Act, (RSO 1990, Ch. P.18.)

At the time of the rate submission, Hydro forecast net income of $318 million and assumed an all customer average rate increase of 8.6 per cent . In arriving at the rate proposal Hydro's Board considered the factors reviewed by Mr. Eliesen

> " We have to take account of the market situation. We have to take account of the corporation's fiscal integrity. And we have had to take account of the potential impact on our customers. And the Board in March believed that the 8.6 per cent rate increase proposed was the one that best reconciled all of those factors that I have just mentioned."

While this rate increase forecasted a withdrawal from the RSRC, it does moderate the impact on customers to some extent and avoids a second consecutive year of double digit rate increases.

Since the 1993 rate proposal the OEB has been informed of changes, primarily to the economic outlook and the load forecast, which despite management's efforts to control costs, have reduced net income to $269 million. There continues to be considerable uncertainty associated with the forecast for 1993 net income. During the rate finalization process in the fall, Hydro's Board will carefully consider any significant changes as well as the OEB's final report.

Hydro's debt ratio has changed very little over the past 10 years and is appropriate .

Hydro's financial forecasting is a comprehensive process which gathers and consolidates the Corporation's expert judgements in terms of planning assumptions and cost estimates into a financial forecast that is reviewed and approved by senior management and Hydro's Board. In addition, during the rate review process, the OEB and intervenors have the opportunity to review all the major planning assumptions and estimates in the financial forecast. Hydro's forecasting process has a good track record in terms of accuracy. It also includes the identification of uncertainty information inherent in forecasts and the use of contingencies when appropriate. The current process appropriately produces an unbiased forecast based on the best available information.

Hydro's total revenue requirement and cost components are addressed throughout evidence during the rate case. The factors contributing to the rate increase are provided to the OEB in order to be helpful in portraying the main drivers of the rate increase. This analysis can be done in different ways to focus on the main issues of the hearing; therefore some judgement is required. During the rate review process, the OEB and intervenors have the opportunity to review these factors and question the methods by which they are calculated to ensure they provide a reasonable representation of the factors contributing to the rate increase.

The circumstances relating to heavy water production have changed. Heavy water is no longer being produced for new capital additions, but is now being produced for loss make-up and risk management purposes, as well as any sales that may materialize. To make efficient use of the heavy water plant, heavy water is being produced in advance of need and stored until required.

To recognize these changed business circumstances, the accounting for heavy water acquisition and use has been revised to be effective January 1, 1993. The major areas affected are the treatment of loss make-up costing, interest capitalization on the heavy water future-use pool, and the treatment of heavy water sales. A detailed description of how the accounting in these areas has changed is provided in Exhibit 9.1.4.

It is Hydro's position that the revised accounting for heavy water achieves the financial policy objective of fairly allocating the costs of producing the heavy water asset to those customers that benefit. Capitalizing interest on the costs accumulated in the future-use pool until sufficient quantities have been produced to meet forecast loss make-up requirements to the date heavy water is available from out-of-service nuclear stations, ensures that the total cost of acquiring the heavy water asset is recognized. Amortizing the future-use pool balance on a sinking fund basis fairly reflects the manner in which the heavy water asset provides benefits to customers, when the effect of interest is taken into account. Crediting the future-use pool with the proceeds of heavy water sales recognizes the benefit of these sales to Hydro's electricity customers.

It is Hydro's position that its policy of deferring and amortizing demand management expenditures that have reasonably assured and specifically identifiable future benefits to Hydro achieves an appropriate matching of demand management costs with the related benefits. A Demand Management Service Life Review Committee was established to make recommendations on the service lives of Hydro's capitalized demand management expenditures. The Committee recommended service lives for all approved demand management programs as indicated in Ex. 9.1.5. A service life assumption of 15 years is considered appropriate by the Energy Management and Corporate Relations Branch for planning purposes.

Hydro's position is that even if payments made under existing NUG contracts contain front end loading, the total amount of the payment should still be accounted for as part of the annual cost of purchased power. Hydro is currently examining the accounting relevant to power purchase contracts that may utilize a revised rate structure, whereby the amount that Hydro pays to the NUG would consist of two components: the cost of purchased power and the amount of the adder/subtractor.

After due consideration of all viable alternatives, Hydro has established accounting policies which reflect intergenerational equity and the requirements of GAAP. Whenever, a policy is established or significantly changed, it has been the Corporation's practice to report the policy changesto the OEB for its review.

By filing its annual report which includes a summary of significant accounting policies and by filing exhibits which address proposed changes in accounting policies, supported by evidence in chief and responses to cross-examination and interrogatories as appropriate, Hydro provides the OEB with appropriate information for understanding the accounting basis for measuring costs.

Hydro's Board of Directors has full and complete information available when making decisions related to electricity rates.

Hydro's policy is that if the Board of Directors specifies that an amount related to a certain transaction be included in future electricity rates, then that amount, which in accordance with its accounting policies would be charged or credited to operations in the current year, is deferred and amortized to future operations on a basis consistent with inclusion in rates. This policy was approved by the Hydro Board in January 1983 and was reviewed and accepted by the OEB in HR12. Hydro has appropriate guidelines for applying its policy on the deferral and amortization of a loss.

A contingency provision related to the costs associated with cancelling the Manitoba Hydro contract has neither been established nor is required for either statutory financial reporting or planning purposes. The primary reason for not establishing a contingency provision is that Ontario Hydro plans to proceed with the contract.

Hydro will establish a provision to offset additional interest on the outstanding balance of the Pickering Nuclear Payback Agreement receivable, effective 1993. Hydro's decision is based on the terms of the Agreement which does not allow for receipt of outstanding accumulated negative payback at Agreement end from AECL and the Province, unless voluntarily done so by those other parties to the Agreement.

Chapter 10 - PROPOSED RATES

The principles underlying Hydro's rates are clearly articulated in Hydro's costing and pricing objectives :

(1) Rates should recover the annual revenue requirement.

(2) Rates should be fair, broadly defined as those which track costs and assign equal treatment to equals based on cost causality, to the extent feasible and practical.

(3) Rates should encourage efficient use of facilities and resources in the production, distribution and consumption of electricity so as to minimize costs to Ontario Hydro customers over the long term.

(4) Rate structures should be publicly acceptable and comprehensible, and should be stable and feasible in application.

Hydro believes that its costing and pricing objectives have served their purposes well. Hydro further believes that these objectives continue to be appropriate and should be adhered to for establishing its customer rates.

Hydro develops its direct industrial rates with the same cost allocation policies and methodologies that underlie all of Hydro's rates. Hydro's cost allocation policies and methodologies have been developed over time and reviewed and accepted by this Board in previous hearings. The cost allocation policies and methodologies are guided by Hydro's costing and pricing objectives, which have also been reviewed and accepted by the OEB in previous hearings. Hydro believes that the policies and methodologies used to derive its rates, including direct industrial rates continue to be appropriate and should be adhered to.

Real-time pricing (RTP) is a natural extension of time-of-use (TOU) rates. TOU rates encourage customers to shift load from pre-defined peak to off-peak periods, and to a lesser extent from winter to summer. RTP, a scheme that bases rates on the moment-to-moment costs of producing electricity, recognizes that within the broadly defined time-of-use periods, some hours will be more costly than others. RTP reflects these differences and encourages customers to manage their loads on a day-to-day basis within the peak and off-peak periods so as to reduce Hydro's overall planning and operating costs. Participating customers can benefit through reduced electricity bills.

RTP is a relatively new rate technique and as stated in evidence there are still many unknowns. It is, therefore, necessary to proceed on an experimental basis to gather additional information which would permit a better assessment of whether or not the rate should be implemented on a full-time basis.

Hydro's rates, terms and conditions for DDS continue to be consistent with its ratemaking objectives and reflect the importance of interruptible loads as a demand management resource. The proposed increase in the discount demonstrates Hydro's continued commitment to the interruptible program while representing a reasonable trade-off between the interests of interruptible and other customers.

Hydro has been refining and intends to continue to refine its rates in support of demand management. However, Hydro also recognizes that there are a number of other principles associated with rate making, including cost recovery, cost tracking, rate stability and customer acceptance which must also be taken into account when setting rates.

Time-of-use rates were first implemented by Hydro in 1989 to all Direct customers and large users served by municipal utilities. Municipal utilities have the option of being billed on time-of-use or non TOU.

Since the introduction of TOU rates, Hydro has worked and will continue to work with utilities to promote TOU rates to end use customers and to extend the rates also within Hydro's own retail system.

Chapter 11 - EXECUTIVE COMPENSATION

Total compensation for Hydro's senior executives is below that of comparable positions in the reference communities identified in the Minister of Energy's reference letter.

Hydro is committed to effective performance-related compensation for its senior executive staff and other appropriate employee groups. Hydro will consider various potential approaches including pay for performance and incentive plans to strengthen and expand its performance-related compensation programs.

Hydro believes that the HR 21 review of senior executive salaries has demonstrated that Hydro's current salary policy is appropriate. Hydro does not agree that a further study of this salary policy is warranted.

Chapter 12 - GENERAL POLICY

In HR 21 the large volume of evidence submitted by a large number of intervenors who put forward many witnesses had to be accommodated by an expansion outside the normal hearing days of the OEB, an increasing trend over the last few years.

One result has been a large number of recommendations addressed to Hydro, the OEB and the government, commenting on the perceived need for changes or additions to the hearing process.

Hydro supports the existing hearing structure and the concept of public review of Hydro's operations. Hydro submits that it is incumbent on the OEB to manage and balance the hearing to keep the focus on those issues before it in any given year which serve the public interest, accommodate the special needs of intervenors, and are relevant to the proposed rate increase.

Hydro does not argue that the status quo is without room for improvement. Nevertheless Hydro submits that the existing public rate review is, in general, regular, limited, focused and controlled and can remain so with the cooperation of all parties and vigilance by the OEB. It may simply not be realistic to attempt to accommodate all the various special interests of the parties appearing before the OEB in the detail and frequency they desire in the context of one year's rate hearing.

Hydro is concerned that the concept of advance intervenor funding, which was intended to improve the quality of evidence at hearings, has instead resulted in an expansion largely in the quantity of material being put forward and is fuelling a desire for longer and more frequent hearings. It threatens to become an invitation to explore virtually any issue of interest to an intervenor, detracting from the statutory focus on rates and at the expense of all of the participants in the rate hearing process. Substantially all of the monetary costs are ultimately borne by the ratepayer.

Hydro is more than a professional hearings funding proponent with the ability to participate in perpetual hearings. A number of references were made throughout this year's testimony to the "real world" within which Hydro conducts its business. Hydro submits that, in the real world, it is not realistic to stop and have a public hearing on every contemplated decision and expenditure.

The challenge is principally to the OEB to manage the hearing process effectively so as to balance the legitimate interests of intervenors, the objectives of the Act and the costs to Hydro, financial and human, in responding to the process.

Hydro submits that an extension of HR 21 for the purpose of considering Bruce A is inappropriate for the reasons which are set out in detail in Chapter 7. Hydro reiterates its testimony and argument that decisions and activities with respect to repair and rehabilitation of Bruce A, like those associated with other major Hydro assets, take place on a continuing basis with no one determinative decision point. These decisions and activities are subject to review in the ordinary course of the current hearing structure.

Hydro is offended by IPPSO's backhanded allegations regarding its approach to the rate hearings. IPPSO alleges that Hydro does not take the hearings seriously and that Hydro regards the hearing as adversial. The large number of Hydro personnel who devote uncounted hours of their time and experience in preparing the submission, evidence, responses to interrogatories, testimony, responses to undertakings and argument, are justifiably affronted. Hydro's witnesses take considerable pains to ensure that parties' legitimate queries are properly answered and they meet fully

Hydro's goal of being as helpful and informative as knowledge and experience allows. The OEB has explicitly recognized the dedication with which Hydro approaches hearing preparation.

The debt guarantee fee was instituted in 1989 in response to recommendations from the OEB. Hydro does not feel that it is the appropriate party to make any request to modify this arrangement.

By statute, Hydro must provide power at cost. Each year Hydro puts forward, for review at the OEB, a rate proposal that would satisfy its revenue requirement based on that concept. The OEB process is a rate review process and as such the rate proposal has to be expressed in terms of average unit cost of electricity.

Most significant utility decisions are made step by step over a period of many years within the context of a long term economic assessment. Before a major program proceeds, assessments based on long term system plans are made. Typically this program undergoes some form of public review (EAB, Select Committee, etc). The decision is then made to start the program which is then broken down into stages and implemented in a stepwise manner. Both the long term plan, establishing the economic context, and the next steps to be made are reviewed either annually in business plans or when a significant event or forecast change occurs. The rate of implementation of the project is adjusted accordingly. There are annual opportunities for the Hydro Board to review and adjust a program and for OEB review.

Chapter 13 - COSTS

This year the rate hearing had a significant number of intervenors actively participating in the hearing. All but two of the seven intervenors funded pursuant to the Intervenor Funding Project Act (Energy Probe, CEG, IPPSO, CAESCO, Seaway, ADMIC, and Mr. Wade) have requested their costs in their final argument. Two other parties, the MEA and AMPCO, have requested their costs in their final argument.

The hearing process needs to be managed to ensure that, while the hearing remains reasonably accessible to all groups having an interest, the focus of the hearing remains appropriate. Hydro submits that a key part of the management of the process is through the funding and cost award mechanisms. Granting or denying advance funding gives intervenors important guidance as to the issues of relevance at the hearing and how to focus their cases to match the scope of the hearing. Cost awards assist in managing the process by rewarding quality interventions that assist the OEB and by denying costs, in full or in part, to those interventions which were not of assistance.

Hydro has taken the opportunity this year to make submissions on some of the general principles which it sees as having particular importance. Hydro also encourages the OEB to offer comments and pronouncements which will give real guidance for the parties as to the conduct and scope of intervention the OEB will reward in costs in various circumstances. These submissions are outlined below. In addition, Hydro has made specific submissions on certain aspects of the intervenors' applications for costs in HR 21.

Having received advance funding in no way establishes that an intervention has in fact been valuable. The fact that an intervenor received intervenor funding does not relieve the intervenor from having to establish that it is deserving of a cost award. Hydro supports the principle enunciated in the OEB's Report on the Costs and Procedural Matters Hearing, E.B.O. 116 (June 12, 1985) that the intervenor has the burden of proving that it is deserving of a cost award.

The OEB has outlined in its Report, the criteria which it considers in judging what portion of each intervenor's reasonably-incurred costs should be paid.

- Quality of the intervention and understanding of the issues
- Quality of the counsel or representative
  in cross-examination and/or examination in chief
- Quality of the argument submitted,
  including recommendations therein and the financial implications thereof

In addition to these criteria, Hydro submits that a fourth criterion be considered by the OEB both in advance funding and in cost decisions, namely:

- The degree to which the intervenor participated in a responsible way having
  due regard to the scope of the hearing and its appropriate role within the hearing

Hydro's comments on each of the applications for costs are summarized below.

MEA requests that the OEB include in its award a direction that Hydro pay interest on the costs from the date of the award. Hydro submits that administrative tribunal proceedings are fundamentally different than civil proceedings and as such the requested change is not warranted.

With regard to AMPCO, Hydro submits that, the evidence of Mr. Murphy on productivity measures was of marginal assistance and the evidence of the industry witnesses on the second witness panel duplicated substantially that of the first panel.

Hydro submits that the CEG showed a consistent disregard for the filing deadlines set out in the OEB's Procedural Order. In addition, CEG filed its own very lengthy evidence late in the hearing, leaving little time for interrogatories and the preparation of cross-examination.

With respect to IPPSO Hydro submits that the written evidence of Mr. Passmore was of no assistance, as it was in fact based on erroneous calculations; the evidence of Mr. Kinosian on the San Onofre case study was irrelevant to the issues; the evidence of Mr. Marcus was of marginal assistance as it provided no analysis and was also filed very late; and the evidence of Ms. Schilberg offered nothing of relevance to the rate year.

Hydro submits that Energy Probe's final argument only demonstrated originality in the sense that it frequently introduced new evidence instead of relying on the evidence presented in the hearing and resurrected a number of arguments it had made in prior hearings.

Hydro submits that the following points are relevant to ADMIC's request for costs: ADMIC's primary focus was on one particular energy management program; Dr. Rhodes' evidence attempted to replicate complex and highly technical avoided cost calculations instead of using information provided by Hydro; and ADMIC's cross-examination of the Fuel and Fuel Related Panel explored minute details of highly technical matters the explanation of which was of no assistance to the OEB.

Hydro submits that CAESCO used its first intervention in the hearings primarily as a learning exercise for its counsel. Even though CAESCO's major focus is in the demand management area, its counsel spent an inordinate amount of time in attendance at the hearing. CAESCO neglected to make any use whatsoever of the interrogatory process.

As a general comment, Hydro notes that there was a wide variance in the quality of final argument filed by the parties.

APPENDIX C

STATEMENT OF COST FORMS

H.R. 21

FORM I

SUMMARY STATEMENT OF FEES

INTERVENOR:______________________ PERIOD COVERED: from:__________ to:__________

LEGAL FEES:

Counsel, (Name):______________ Yr. of Call:______ Firm:______________ GST REG. NO.:______________

	Hours Requested (hrs.)	Hourly/Daily Rate ($per hr/day)	Fees = Hours X Rate ($ without GST)	GST on Fees ($ at 7%)	Input Tax Credit (GST X ___ %)	Total Requested $ (Fees + GST - ITC)
PREPARATION						
TRAVEL						
TOTAL COUNSEL						

CONSULTANT FEES:

Consultant, (Name):______________ Firm:______________ GST REG. NO.:______________

	Hours Requested (hrs.)	Hourly/Daily Rate ($per hr/day)	Fees = Hours X Rate ($ without GST)	GST on Fees ($ at 7%)	Input Tax Credit (GST X ___ %)	Total Requested $ (Fees + GST - ITC)
PREPARATION						
TRAVEL						
TOTAL CONSULTANT						

NOTE: If more than one Counsel/Student at Law/Consultant etc. was retained, segregated information is required.

FORM II
SUMMARY STATEMENT OF DISBURSEMENTS

INTERVENOR:____________________ PERIOD COVERED, From: __________ To:__________

Name:____________________ Firm:____________________ GST Reg. No.:__________

	Costs Requested (without GST)	GST on costs ($ at 7%)	Input Tax Credit (GST X ___%)	Total Request (Cost+GST-ITC)
PHOTOCOPIES	____	____	____	____
PRINTING	____	____	____	____
BINDING SERVICES	____	____	____	____
COURIER	____	____	____	____
TELECOPIER (FAX)	____	____	____	____
TELEPHONE	____	____	____	____
POSTAGE	____	____	____	____
MEALS	____	____	____	____
PARKING	____	____	____	____
TRAVEL: Air	____	____	____	____
TRAVEL: Car	____	____	____	____
TRAVEL: Other	____	____	____	____
ACCOMODATION	____	____	____	____
OTHER (explain)	____	____	____	____
TOTAL DISBURSEMENTS	____	____	____	____

ACCOMODATION: Number of Nights:__________ Avg. $ per Night:__________

TRAVEL COSTS: Air: # Return Trips:__________ Air: $ per Return Trip:__________

Auto: Total # of kms:__________ Auto: Avg. $/km:__________

Departure - Destination: From:__________ To:__________

MEALS: # Meals Claimed:__________ Avg. $ per Meal:__________

Total Number of Travel Days:__________

NOTE: Fill out one form per Legal/Consulting etc. firm.